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fueloil & oil heat

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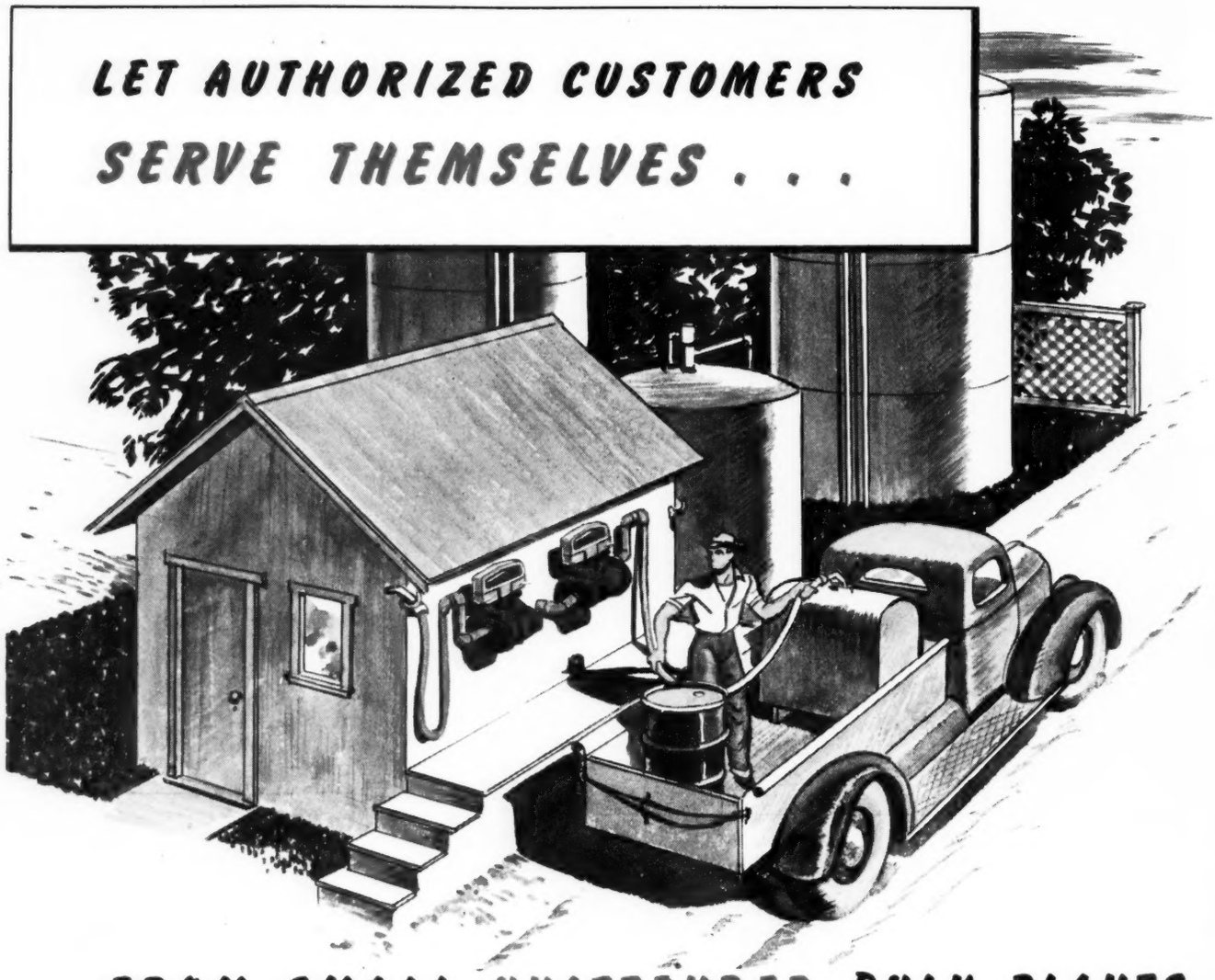

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VOL. 4 NO. 10

fueloil & oil heat

FEBRUARY

1946

Names in the News

Major Parker Devlin has returned from more than three years of overseas duty and has again been placed in charge of the activities of McDonnell & Miller in the New England states. In forty-four months of service, Major Devlin was first in the Caribbean defense area supervising anti-aircraft implacements to protect the canal zone. Later in the Pacific theatre he served in the Marshall Islands, then at Ulithi, and finally at Guam.

Daniel J. Shanahan, Chief of OPA's Industrial Materials and Fuels Section, and also Petroleum Price Representative at New York resigned Jan. 24 to return to private industry as wholesale petroleum products sales manager for White Fuel Corp., Boston, Mass. Succeeding Shanahan as Oil Price Representative at New York is *A. C. Cornish,* former Regional Fuel Rationing Officer and before that representative of the Standard Oil Co. of N. J. in China.

M. W. *Bowen* has been appointed general sales manager of the National Thermal Drive Co., Inc., St. Paul, Minn., manufacturers of variable speed blower controls for forced warm air systems. Bowen was originally an oilburner man, a member of the "Old Timers' Club" and for the past six years has been manager of the Furnace Department of Stainless and Steel Products Co.

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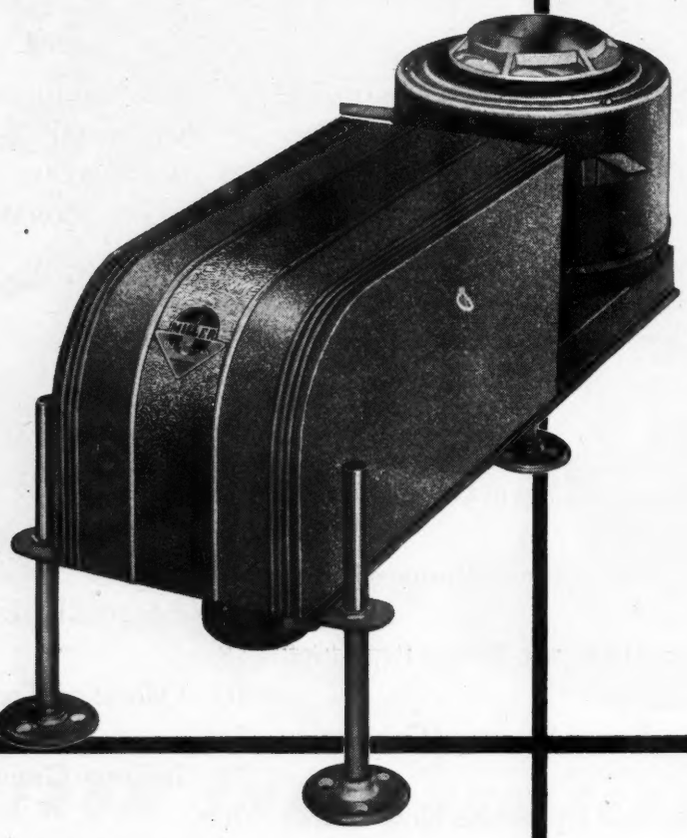
FOR SMALL HOMES



LOW FIRST COST, LOW OPERATING COST. Burns less than 1 gal. oil per hour at high fire. Underwriters' approved to burn No. 3 oil. Carries Commercial Standards Label CS75-42. You'll need this burner. Small home owners will want it because it is most efficient, most economical, and has been proven in actual use. It was expressly designed for small homes and can be installed in warm air furnaces, or steam or hot water boilers. Valuable Franchises available. Wire or write for details today.

THE MILLER COMPANY, Heating Products Division. MERIDEN, CONNECTICUT

ILLUMINATING DIVISION, Fluorescent, Incandescent, Mercury Lighting Equipment: HEATING PRODUCTS DIVISION, Domestic Oil Burners, Liquid Fuel Devices: ROLLING MILL DIVISION, Phosphor Bronze and Bress in Sheets, Strips and Rolls: FOUNDRY DIVISION, Non-Ferrous Metal Castings.

MILLER SINCE 1844

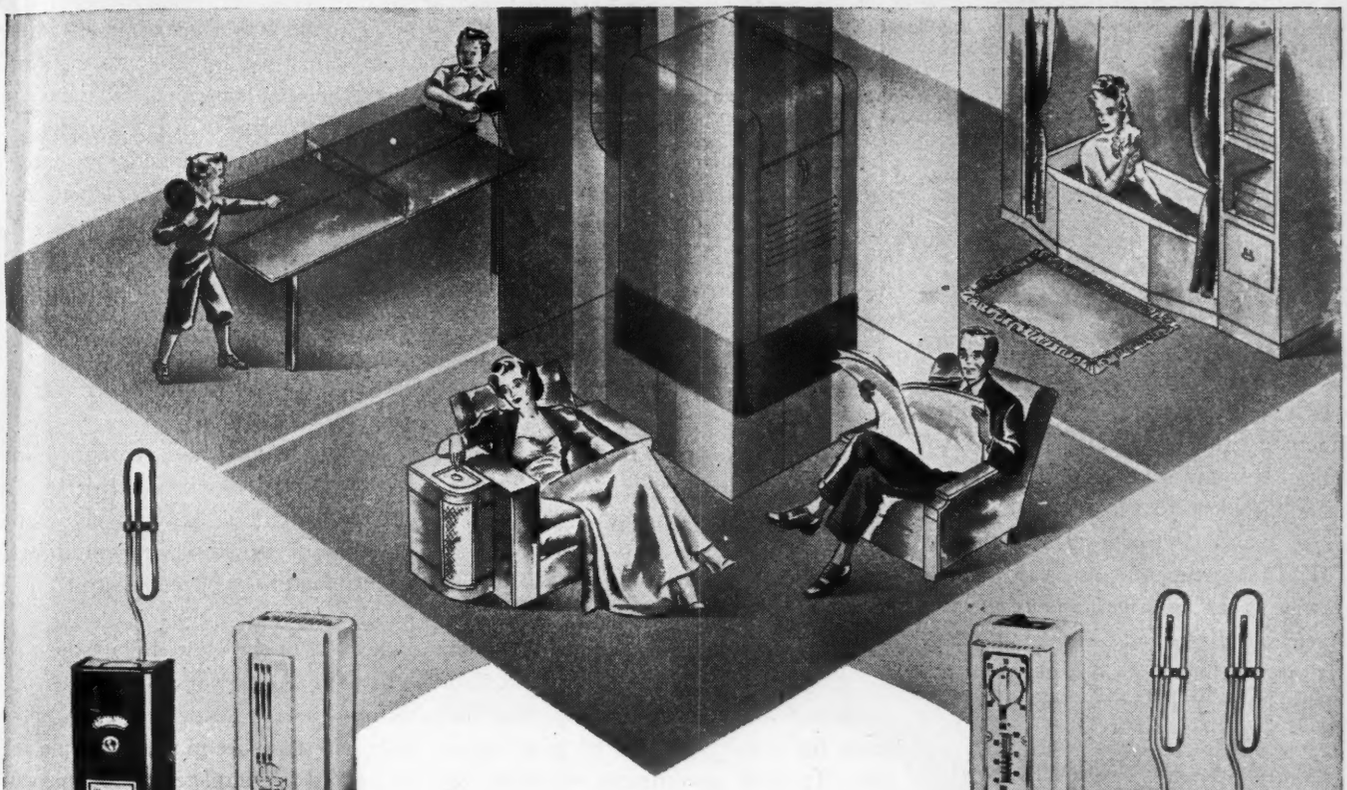
MILLER OIL BURNER

Herbert B. Brown has returned to the Chicago branch of the Neptune Meter Co. from active duty as a Captain with the Twenty-Third Tank Destroyer Group.

Walter S. Peper has been appointed New York representative of Davisbilt Products Co., Cinn. A professional engineer, Mr. Peper served in executive capacities with Eastern Coach Service in New York, Bellanca Aircraft Corp., Gulf Oil Corp., Smith & Gregory, Packard Motor and Canadian American Truck Company. Recently he designed and managed transport for Army Ordnance.

J. P. McIlhenny, Sales Manager of General Electric's Air Conditioning Division has announced the appointment of ten new district managers. These are: *R. S. Thurston* with headquarters in Boston, N. E. district; *L. T. Brockbank* with headquarters in N. Y., N. Y. district; *C. S. Morash* with headquarters in Phil., Atlantic division; *G. B. Hightower* with headquarters in Atlanta, Southeastern district; *J. F. Murphy* with headquarters in Cleveland, East Central District; *J. F. Carland* with headquarters in Dallas, Southwestern district; *E. H. Howes* with headquarters in San Francisco, Pacific district; and *W. H. Stover* with headquarters in Portland, Northwestern district.

A. F. Rice has been appointed Pacific Coast Manager for Rheem Manufacturing Co., heading appliance sales. He recently returned to the company after serving as a Major in the U. S. Engineers. Prior to that, he was identified with the Appliance industry on the Coast for more than twenty-five years. *H. W. Angell* will be district manager for northern California and Nevada, and *A. R. Jewell* will be sales representative for southern California, Arizona and Utah. *F. F. Ling* will represent the division in the north Pacific states.



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Controls Insure COMFORT in your buildings

Heating and air-conditioning mean just one thing to most users . . . HEALTH and COMFORT. The degree of satisfaction they derive from your equipment is based primarily on its performance. Let the unusual accuracy and dependability of White-Rodgers automatic controls insure the HEALTH and COMFORT built into your equipment. Write today for catalog and installation data.

WHITE-RODGERS ELECTRIC CO.

ST. LOUIS 6, MISSOURI

Controls for Refrigeration • Heating

Air Conditioning

Editorial Leaks

Indignation in building circles is running hotter than somewhat over the present bills before Congress to put the Government further into the construction business. It sounds like the solution to the housing problem to those who have no place to live to toss the problem in the lap of "The Government." At least that is the way other pressing problems have been either solved or lost in the last dozen years, and the generation brought up to let Pappa Fix is willing to continue that way.

Unfortunately, problems as personal as finding a home for Mamma and the kids are not going to be solved in Washington. The place to look for a house or an apartment is nearer home.

Present bills before Congress provide only for the Government to create priorities with which available building materials may be seized to build quickly houses and dormitories. Legislation will not cut more timber, saw more lumber, or produce more heating equipment. It provides only that the available supply may be depleted for government housing and make it harder, if not impossible, for private builders and prospective homeowners to get the supplies they need at any price.

Reports of some of the fast attempts now being made to convert barracks and remodel abandoned hospitals into living quarters are not too encouraging. It seems inevitable that these areas are destined to become slum areas and a problem in the next few years. "Temporary" living quarters have a way of running down instead of being improved.

In the meantime, builders are anxious to get materials for privately financed homes and apartments. It is probable that a paternalistic government will "fix,"—but good!

◈

While on the subject of legislation, it seems the place to question the provisions of the Full Employment Bill which President Truman has asked of Congress. This bill asks that the President's annual Budget Message estimate the level of employment for the year ahead and recommend policy measures accordingly.

For more than five years, all postwar planning has been geared to the expectation of a postwar depression and a high level of unemployment. As late as last fall there were predictions of mass unemployment from Washington.

Today, in spite of strikes and other voluntary unemployment, payrolls and individual earnings are only slightly below the wartime peak, and are rising. Official employment predictions of only three months ago are wrong by at least three million jobs, and the pressure to find men who can and will work is increasing.

When government estimates are unable to predict the level of unemployment three months ahead, and hit it within three million, there is little hope that the guess for a full year will be more accurate. To gear government optimism or pessimism over business to such guesses seems to be inviting official meddling that will make price control seem trivial.

◈

The average homeowner pays more each year for fuel than for any other item in connection with his home, with the possible exception of taxes. Yet, few owners, and almost no prospective owners, show any real understanding or interest in the equipment that can make such a difference in the size of the fuel bill and the comfort and utility of the house. As long as the house has a "furnace" it is supposed to be complete and livable. If there are visible radiators or grilles in the living quarters, few laymen ever know to what they are connected before he buys the house.

Such casual treatment of our business by the public is understandable, though not desirable. Perhaps it is our own fault that the public brushes off our equipment with so little thought. Perhaps we have been negligent in telling people about the importance of good heating, but it is doubly hard to find that we get the same callous disregard from our brothers in the building business.

The Committee on Opportunities for Veterans in the Construction Industry has just issued an excellent 50-page booklet explaining employment opportunities in construction from building a chicken house to Boulder Dam. Eminent Universities and most Engineering Societies (except ASHVE) contributed to the volume, and have contrived to paint a picture of wide choice for gainful employment from engineers to tin-knockers' helpers, but it takes a careful reading of the book to find any reference to heating.

Under "Mechanical Engineering," which is kissed-off as being secondary to civil engineering, heating is mentioned as one of the fields falling under that wide category.

"In the heating and ventilating fields, for example," the book explains, "mechanical engineers have to do with the problems of providing appropriately controlled conditions of temperature and humidity—."

In most of the United States heat is essential to proper working and living conditions for a considerable part of each year. No structure in which people are to be housed is complete without provision for artificial heat, yet it is taken so much for granted that it hardly rates a line of explanation in a catalog of opportunities in the construction industry.

◈

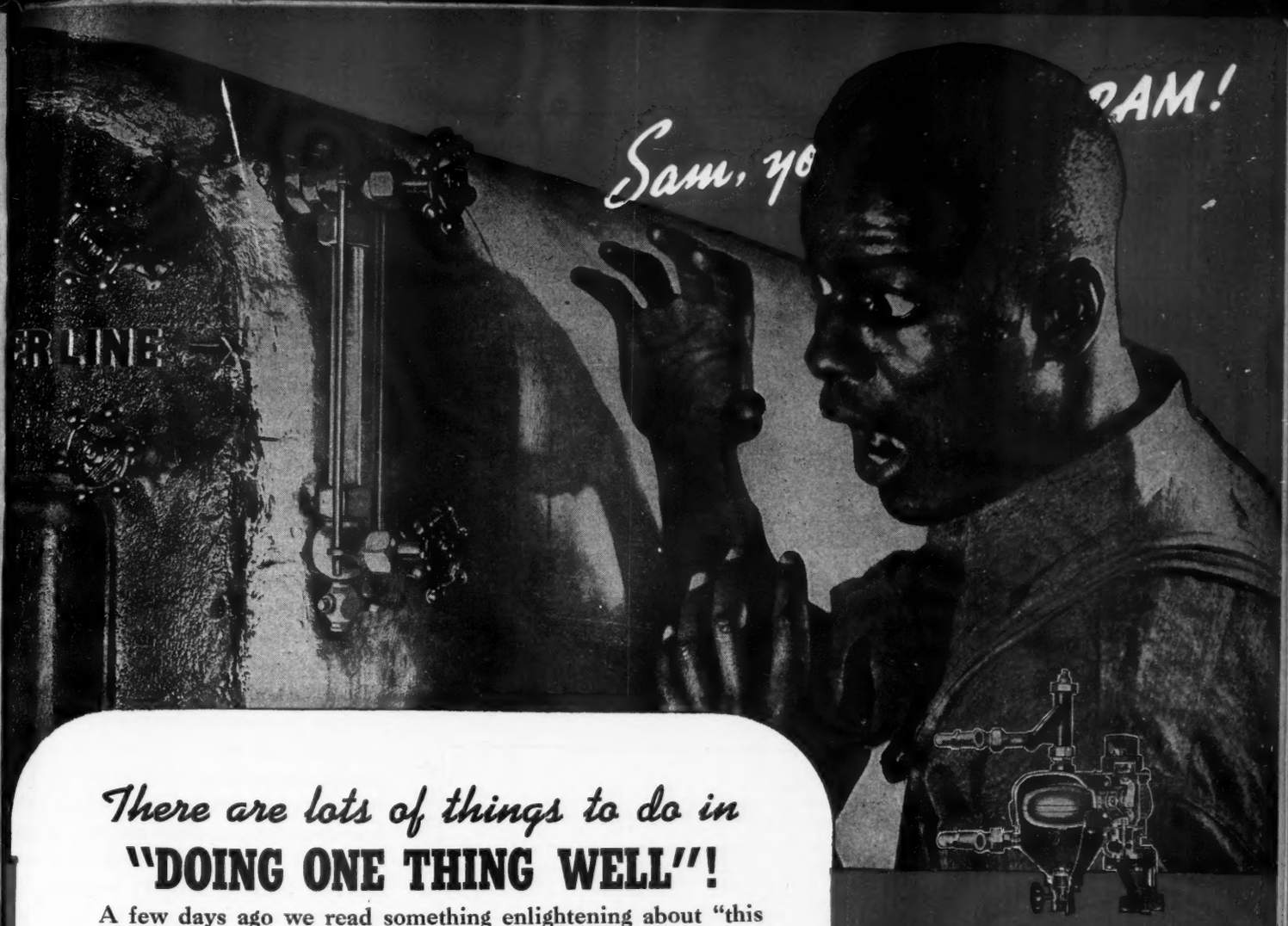
The fueloil price rise of 3/10¢ that went into effect in the East January 24, added to the 2/10¢ rise of December 19 brought a total rise of ½¢, and this latter amount was also given the Midwest and South on the same January date.

Momentarily, this will have little adverse effect on oilheating users, for price increases are common these days.

With wholesale gasoline prices decidedly soft because refiners have made far too much of the product, and with fueloil now raised to its highest refinery price in years, heating oil is now the more profitable product. That's one for the book.

Industry economists have been able to show at any time in the past generation that fueloil was being subsidized by gasoline at about a cent a gallon. And while today's high fuel price is temporary, the time is coming in the years of large fueloil growth when the price will be put up to stay, perhaps a cent . . . giving it parity with gasoline in refinery profits.

Oilheating men will not squawk . . . if . . . refiners will then put into oilheating promotion some of the millions they now spend on gasoline promotion.



There are lots of things to do in

"DOING ONE THING WELL"!

A few days ago we read something enlightening about "this modern world." It wasn't one of those articles about atom splitting; it was the preface to an automoble instruction book printed in the year 1906! It told the proud owner: "While your 'Surrey Type' Auto has attained test speeds of 30 miles per hour, the sane driver will not want to hazard the break-neck speeds now possible in *this modern world.*" (The italics are ours.)

Well . . . wasn't 1906 modern? Long before 1906, and every year since, people have been talking rather arrogantly about "this modern world." We talked it very excitedly at the end of World War I, and we are talking it still more excitedly now. But the fact is that "this modern world" is only a state of mind—today's mind.

Too often manufacturers become smug and complacent about their so-called "modern" products. Those who avoid this state of mind—who realize that "modern" is merely the designation of the point reached today—are always easy to identify. They are simply the fellows who keep on improving things!

We have tried to avoid the "arrived" state of mind. "Doing One Thing Well" hasn't simply meant making good equipment and letting it go at that. That is why our record is studded with developments like the first Quick-Hook-Up, the first cool feed valve, the first packless feed valve, the first stainless steel valves, and so on down the ever-lengthening list.

And we're still at it, and we'll always be at it, as evidenced by the boiler water feeders and low water cut-offs illustrated here. Just now, the big problem is to make them fast enough, but this is only a passing condition.

McDONNELL & MILLER, *Inc.*, 1310 Wrigley Bldg., Chicago 11, Ill.

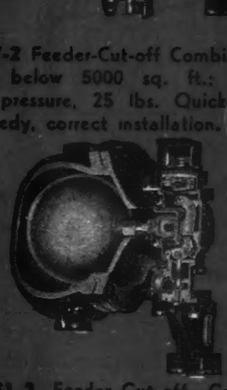
Doing One Thing Well

REG. U. S. PAT. OFF.

McDONNELL

Boiler Water Level Controls

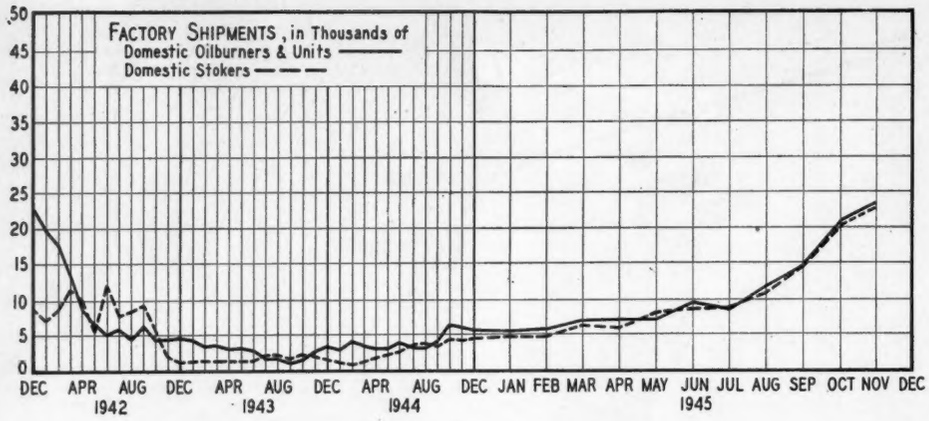
No. 47-2 Feeder-Cut-off Combination for boilers below 5000 sq. ft.; maximum steam pressure, 25 lbs. Quick-Hook-Up for speedy, correct installation.



No. 51-2 Feeder-Cut-off Combination. Functions same as 47-2, but for boilers larger than 5000 sq. ft.; maximum steam pressure, 35 lbs.

No. 67 Low Water Cut-off for all automatically fired boilers; maximum steam pressure, 25 lbs.

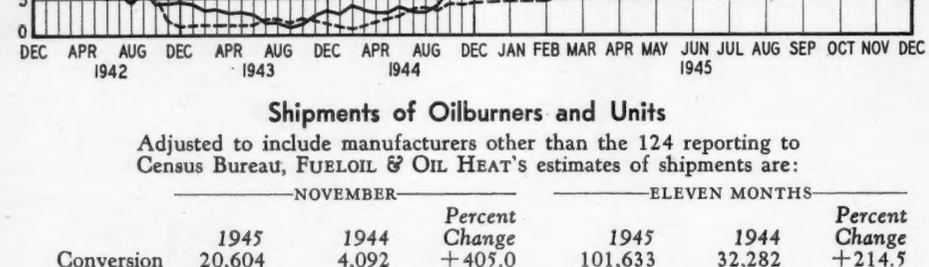
No. 150 Water Level Control for boilers of any size with steam pressures up to 150 lbs. Used as feed-pump control; low-water cut-off; low water alarm, or any combination of these functions.


FACTORY SHIPMENTS, in Thousands of
Domestic Oilburners & Units
Domestic Stokers
DEC APR AUG DEC APR AUG DEC APR AUG DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
1942
1943
1944
1945

Shipments of Oilburners and Units

Adjusted to include manufacturers other than the 124 reporting to Census Bureau, FUELOIL & OIL HEAT's estimates of shipments are:

	NOVEMBER			ELEVEN MONTHS		
	1945	*1944*	*Percent Change*	*1945*	*1944*	*Percent Change*
Conversion	20,604	4,092	+405.0	101,633	32,282	+214.5
Boiler units	938	871	+ 7.2	7,091	5,674	+ 24.8
Furnace units	1,784	959	+ 85.8	13,222	5,067	+161.3
All domestic	23,326	5,922	+294.0	121,946	43,023	+183.0
Commercial	1,796	2,660	— 32.5	31,143	29,322	+ 6.1
Total	25,122	8,582	+192.8	153,089	72,345	+112.1


STOCKS OF DOMESTIC OILBURNERS AND UNITS
(in Thousands) End of Month Shown
Factory Stocks
Dealer Stocks
JUN SEP DEC APR AUG DEC APR AUG DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
1942
1943
1944
1945

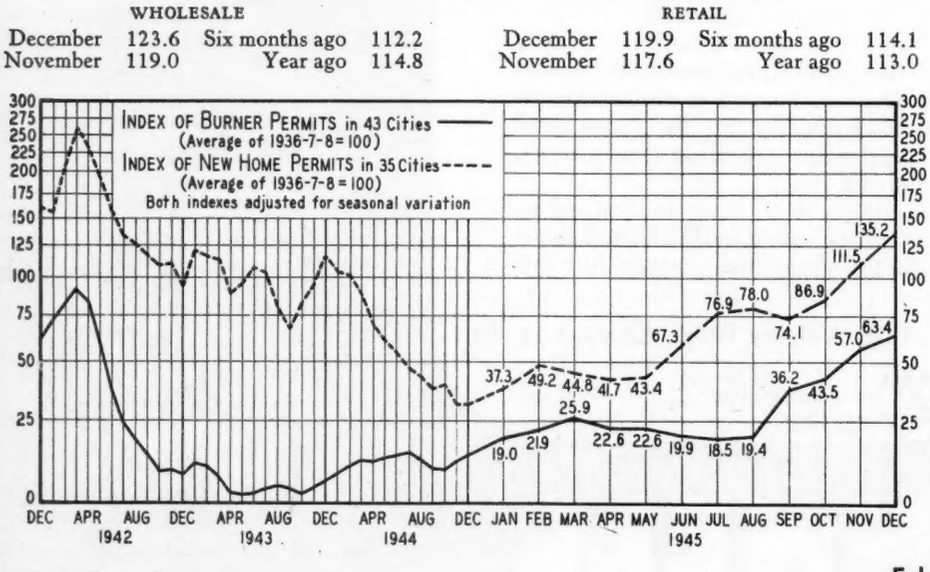
December Minimum Retail Prices: Key Dealers

	CONVERSION BURNERS		BOILER-BURNERS		FURNACE-BURNERS	
	*Top price**	*Low price*	*Top price**	*Low price*	*Top price**	*Low price*
Highest	$398	$...	$675	$...	$500	$...
Lowest	220	...	425	...	425	...
Dec. Aver.	276	...	530	...	482	...
Nov. Aver.	276	...	526	...	496	358

*Top price key dealers for conversion burners are those whose minimum retail prices are $200 or more, for boiler-burner and furnace-burner units (exclusive of ductwork) those whose minimums are $400 or over.

Price Index: Conversion Burners: January 1940 is 100%

WHOLESALE				RETAIL			
December	123.6	Six months ago	112.2	December	119.9	Six months ago	114.1
November	119.0	Year ago	114.8	November	117.6	Year ago	113.0


INDEX OF BURNER PERMITS in 43 Cities
(Average of 1936-7-8=100)
INDEX OF NEW HOME PERMITS in 35 Cities
(Average of 1936-7-8=100)
Both indexes adjusted for seasonal variation
DEC APR AUG DEC APR AUG DEC APR AUG DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
1942
1943
1944
1945

Oilheating Trends

ESTIMATED INSTALLATIONS OF domestic oilburners and units in December were 23,549, a slight drop from November's 25,356. For the first time since V-J Day, December installations were more than the sales made in the month, and dealers started cutting into their large backlogs. Sales were 20,977, compared with November sales of 51,500. Dealers on the whole are discouraging new orders until they can fill more of those they now have.

Actual installations of domestic burners and units for the full year 1945 were 145,596. The total of the twelve monthly estimates that have appeared in this section is approximately 160,000, or ten per cent more than the final figure arrived at by the much larger annual survey made in December. This ten per cent margin of error is somewhat greater than occurs in most years, and is due to the unusual nature of sales figures during the year. In former times sales and installations have been considered as about the same in any month. It was not until September that the editors recognized the necessity for separating sales and installations because orders were greatly exceeding actual deliveries. Thus the 15,000 excess in the total monthly reports over the actual annual figure can be recognized as sales made before September that were not actually installed until fall, when burners became available in better volume.

BURNER STOCKS: In dealer hands on December 31 were aproximately 4,625 domestic burners and units, a new low point, indicating that installations occur within three or four days after burners arrive from the factories. Factory stocks on Nov. 30, the latest available information, were 3,889, also a new low point.

GETTING BURNERS: Based on reports from key dealers, unshipped factory orders on December 31 for domestic conversion burners and units were approximately 248,390. This compares with official reports from factories two months earlier, October 31, that they had unshipped orders of 162,546. Thus, in the two intervening months, dealers have piled up their orders considerably higher, largely with the feeling that they were only going to get in the near future a small fractional share of orders placed, so may as well order plenty. One fairly large manufacturer has reported that his entire

1946 output is completely booked by his dealers. Assuming that the forecast of 420,000 installations in 1946 is somewhere near right, 59% of these are now on order. Some factories have encouraged their dealers to make strong commitments now, so they can adapt their production potentials to dealer thinking.

Asked when their factories have promised to be in full production, so dealers can get all they need, 36% of those reporting this month mention various dates in the spring, from March to June, averaging about the end of April. Four per cent mention a date in the fall, and nine per cent mention the early months of 1947. The other half of dealers reporting have no promises of this nature.

SERVICE INCOME: The average service income in December of all reporting dealers was $2,956, against $2,420 for the identical dealers in 1944, a rise of 22.1%. It can be assumed that by now replacement burner sales have been removed from service departments and switched to sales department credits, so that the department income is for actual service on existing burners.

FACTORY COOPERATION: Before the war oilburner manufacturers gave their dealers a lot of cooperation in helping select and train sales forces, in service schools and in various forms of management assistance and advice. Naturally, with production problems so acute and with a dozen dealers palpitating for every burner that comes off the line, this factory cooperation is far short of prewar . . . but there are degrees. A few manufacturers are starting now vigorously to strengthen individual dealers against the day when competition will again be active, perhaps in the spring of 1947. Of all dealers reporting this month, 62%, or five out of eight, say they are getting much less help than before the war. The next 19% gets slightly less help; 14% get about the same assistance from their factories as in 1941; the remaining 5% is getting more help. Summarized, one dealer in five now has equal or better factory cooperation than before the war.

One form of factory assistance that makes a better showing is cooperative advertising, with 38% of the dealers reporting that they get this help now, if they want to use it. The most frequently mentioned rate is $5 a burner or unit, not as a rule deducted from the invoice, but paid when proofs of the advertisements are submitted. A few report $2.50 a burner advertising help; some say it's 50-50, within various limits, and for a few large city dealers the factories arrange their own local advertising and pay the full cost.

Factory field men are not out in anything like the force they were before the war, with four-fifths of the dealers saying that there are few, if any, men from competitive factories trying to get their business; the other one-fifth report about the same number coming around.

NEW DEALERS: During the fall months quite a number of new retail outlets for both oilburners and fueloil made their appearance. They came in under auspicious circumstances, not only because business looks good for a few years ahead, but also because there was little inclination on the part of old dealers to be concerned about the new competition. The general attitude is that there is plenty of business, and also they know that about

(Continued on page 110)

Oilburner* and Building Permits

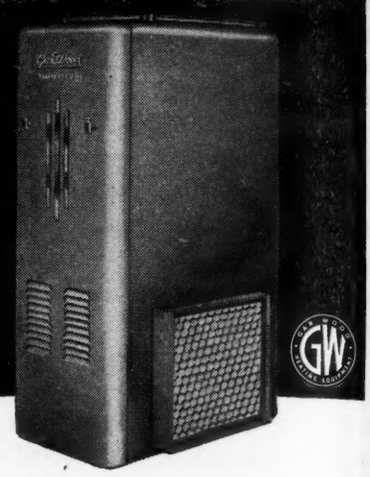
OILBURNERS					DWELLINGS			
November		11 MONTHS			November		11 MONTHS	
1945	1944	1945	1944		1945	1944	1945	1944
..	..	..	..	Baltimore, Maryland	104	53	561	173
..	..	..	..	Binghamton, New York	1	0	37	1
..	..	..	..	Bloomfield, N. J.	6	0	..	..
246	84	..	238	Boston, Massachusetts	..	..	..	..
59	9	430	123	Bridgeport, Conn.	..	..	..	..
..	..	..	..	Buffalo, New York	11	0	63	45
88	11	..	205	Detroit, Michigan	416	23	3341	2467
28	7	171	32	Elizabeth, N. J.	0	0	..	0
17	16	162	64	Freeport, New York	..	..	..	..
..	..	..	..	Greenwich, Conn.	27	0	52	2
..	..	..	..	Hackensack, N. J.	8	0	70	0
52	5	655	82	Hartford, Conn.	..	..	..	..
13	4	120	18	Irvington, N. J.	0	0	3	8
..	..	..	..	Lynn, Massachusetts	1	0	8	1
15	..	..	..	Meriden, Conn.	..	..	..	..
59	2	304	45	Milwaukee, Wisc.	56	14	..	261
48	20	729	226	Minneapolis, Minn.	71	65	728	183
15	5	114	34	Montclair, N. J.	..	..	..	..
..	..	..	..	Morristown, N. J.	0	0	1	0
24	22	268	124	Mt. Vernon, New York	..	..	..	..
37	24	373	171	New Bedford, Mass.	..	..	..	..
15	5	206	43	New Haven, Conn.	..	..	..	..
0	0	0	3	New Orleans, La.	..	..	..	..
24	6	207	25	New Rochelle, N. Y.	4	0	15	1
325	53	..	318	Manhattan, Bronx, Rchd	..	..	..	..
46	7	..	28	Norfolk, Virginia	10	2	69	15
0	3	3	8	Oakland, Calif.	..	..	..	..
43	14	259	166	Omaha, Nebraska	16	14	292	381
11	0	96	3	Orange, New Jersey	11	0	12	0
17	..	..	..	Passaic, New Jersey	..	..	..	..
17	11	251	67	Paterson, N. J.	2	1	5	4
..	..	..	..	Plainfield, N. J.	2	0	19	7
34	6	267	40	Portland, Maine	0	0	5	4
..	..	..	..	Portland, Oregon	136	11	596	445
14	..	..	..	Poughkeepsie, N. Y.	..	..	..	..
34	6	200	..	Providence, R. I.	0	0	20	1
..	..	..	..	Reading, Penna.	0	0	22	0
22	0	99	0	Richmond, Virginia	39	5	598	203
32	0	..	0	Rochester, N. Y.	..	..	..	..
12	6	109	39	Rockville Center, N. Y.	37	0	41	0
9	1	70	30	Salem, Massachusetts	0	0	4	0
33	9	206	74	St. Louis, Missouri	16	0	47	0
92	21	458	160	St. Paul, Minnesota	56	11	527	93
29	1	..	18	Schenectady, N. Y.	..	..	..	..
..	..	..	..	Seattle, Washington	121	60	1364	1212
..	..	..	..	Springfield, Mass.	5	1	182	16
33	2	..	37	Stamford, Conn.	..	..	..	..
14	0	..	8	Syracuse, New York	14	0	107	22
..	..	..	..	Trenton, New Jersey	0	0	5	8
..	..	..	..	Utica, New York	1	0	9	31
101	23	595	182	Washington, D. C.	..	..	..	..
..	..	..	..	West Orange, N. J.	4	0	17	0
..	..	..	..	White Plains, N. Y.	..	0	6	0
37	2	176	24	Wilmington, Delaware	24	0	34	10
54	25	357	194	Worcester, Mass.	..	..	..	..
28	3	..	95	Yonkers, New York	..	..	..	..
1731	413	6885	1977	*Totals*	1199	260	8860	5333
+319.1		+248.1		*Percent Change*	+361.1		+60.6	

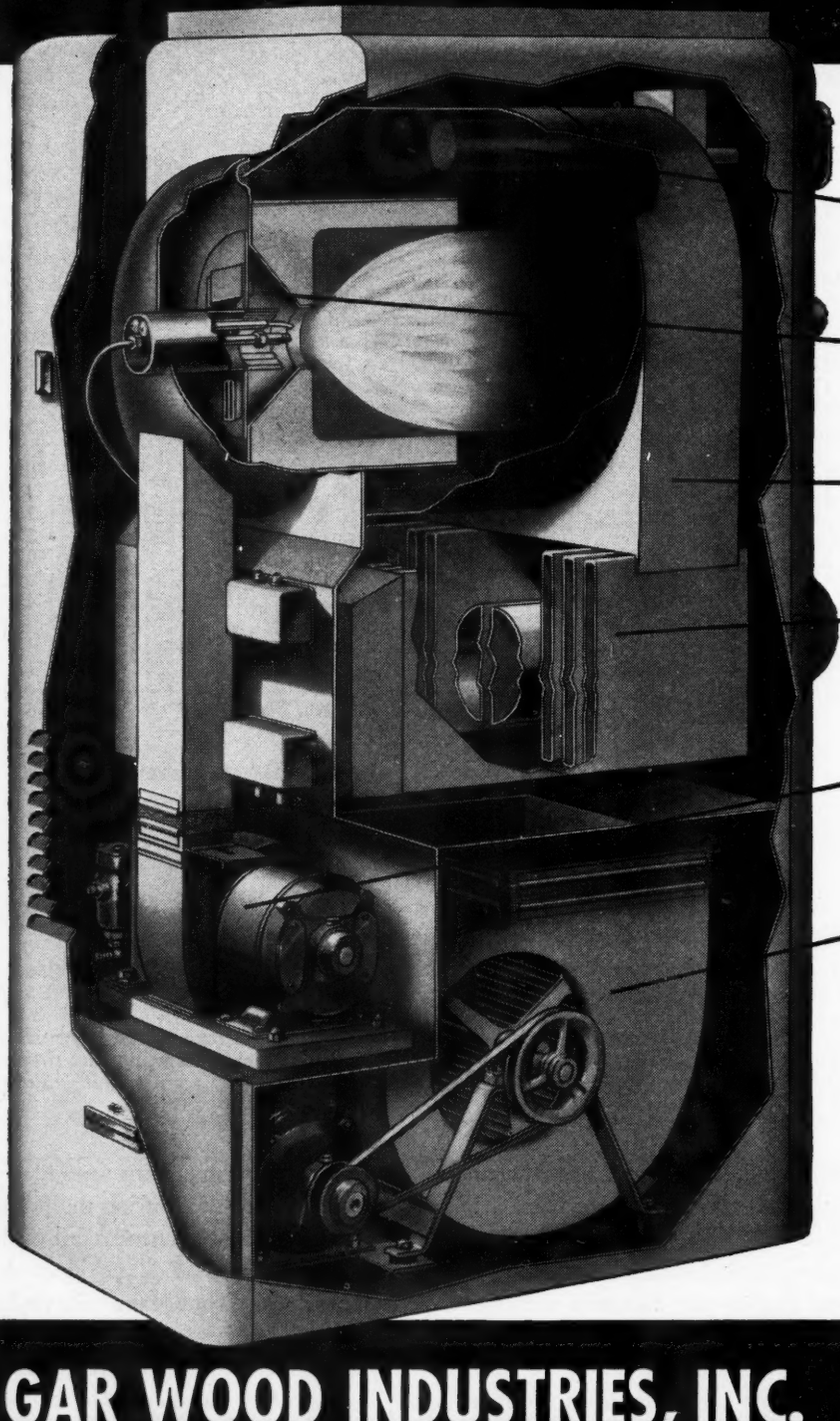
*Permits are not total sales in each market since none are reported from suburban areas, which normally account for 20% to 60% of total sales in each market; nor are they an accurate index where enforcement is lax. Rightly used, however, they are a useful working index.

LOOK TO THE NEW OIL-FIRED

Gar Wood TEMPERED-AIRE

for the Outstanding Sales Features





The quick-acting FLASH HUMIDIFIER is designed to supply adequate humidity under present day short firing cycle conditions.

The FIRING ASSEMBLY is integrally built and provides air and oil properly intermingled and rotated for perfect combustion.

The FIREBOX is tear-drop shaped to remove the peak from the high temperature zone. This, plus sturdy construction, gives long life.

The ECONOMIZER uses the counterflow principle by passing the combustion gases through long, thin tubes between which the cold air must pass.

The rubber mounted POWER UNIT supplies air under pressure to the burner windbox and also maintains a controlled oil pressure in the burner fuel nozzle.

The silent AIR BLOWER is designed to deliver a generous quantity of air against the friction of the duct system, with the motor drawing a minimum of wattage.

This advertisement describes postwar equipment which is not now available. It does not constitute an offer to sell or deliver and no suggestion is made that orders be solicited. This notice will cease to apply when ceiling prices have been established by the O.P.A.

TO BE ANNOUNCED SOON: Gar Wood GAS-FIRED Tempered-Aire featuring the new CAST IRON, high efficiency heat exchanger.

GAR WOOD INDUSTRIES, INC.

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HOISTS and BODIES . . . WINCHES and CRANES . . . TANKS . . . ROAD MACHINERY . . . MOTOR BOATS

Plan Now to Sell

Passionate Purchasers Are Clouding Our Thoughts

By
W. A. Matheson

Mr. Matheson is president of Oil-Heat Institute and heads the Oil-O-Matic Div. of Eureka-Williams Corp. This is a paper he delivered at the annual meeting of the Northwest Petroleum Association in Minneapolis January 24th. His paper was entitled "Sell or Go Bust," a title suggested by Elwin Hadlick, president of the Association. Since the same title had been used in a previous talk with different context, the heading on this page is different, so readers will recognize that this is a new treatise on the theme of sales planning.

MY NAME IS JOHN SMITH. I have just returned from five years outside the United States. I left this country a hard-working, enthusiastic salesman. I left in the midst of a vigorous competitive situation. I left when all of us salesmen were faced with the serious problem of disposing of the goods that were being produced.

Of course, what I have just said is a fantasy. I haven't been out of the United States at all. I haven't been gone from the American scene. I have been just as busy as the rest of the country—engaged in a severe wartime economy, but I might just as well have been out of the country because now that I have turned my attention from war to peace, I find that all about me is strange. I find that I am in need of a fresh viewpoint. I find myself almost with an outsider's viewpoint.

I might as well have just now landed on Ellis Island. The United States of 1946 is quite different from the United States of 1939. Suppose for the moment that my opening remarks were true—that we have just landed in the United States—the land of plenty. The land of automobiles, radios, refrigerators, oilburners, telephones, vacuum cleaners, washers, and the other countless conveniences that have long made the average American the envy of the rest of the world. Having landed, let's size up the state of the nation. And —from our outsider's viewpoint—we are almost stunned to discover a scarcity of everything—everything except money.

During the 5½ year war period—1940 to June, 1945, inclusive—the American people saved $194,700,000,000. Of this amount, $140 billion is in liquid form. This great pool of liquid assets comprises the inflation threat to this country.

Continuing our research we find that income of individuals in the United States has more than tripled since the depression bottom of 1933. Per capita income payments to individuals reached a new peak of $1,117 in 1944, compared with $368 in 1933. In 1940 the average was $575. Average per capita income—counting the entire population—ranged from $202 in Mississippi to $896 in Delaware in 1940. By 1944 the range was $528 in Mississippi to $1,519 in New York.

High Income Payments

In 1941, Americans received income payments of $92.7 billion. The estimate for 1945 is $158 billion—an increase of almost $66 billion. In 1941 personal taxes claimed $4 billion of the Nation's individual incomes—taxes in 1945 took better than five times that much or $20.5 billion. Consumer expenditures of $74.6 billion in 1941 rose but slightly more than one-third to $100.5 billion in '45. But net savings of individuals—$14.1 billion in 1941—pyramided more than 2½ times in 1945, to reach $37 billion for the year.

The subject of this talk today . . . "Sell —or Go Bust!" . . . was suggested to me rather than its being a product of my own mind. I think the man who originated it showed just a touch of genius because certainly a great deal of foresight is evidenced when such a topic is suggested in the very midst of the greatest buying spree in American history.

"Sell—or Go Bust!", sure, but a more appropriate and a more fitting theme might be "Plan—or Go Bust!", because unless we plan we will not sell. And in order to plan I must know where we are now. I have just described where we are with respect to the billions of dollars comprising the inflation threat to this country. So with your permission, we'll discuss the plans to make to sell . . . to absorb these dollars.

Our first question then becomes: "What will Americans do with their billions of dollars in savings?" This question should be a matter of conjecture and concern for any planner. However . . . as late as Sunday, December 23, Chicagoans read this headline: "Chance for average man to buy 1946 car is slim."

Let's travel to downstate Illinois and look in on a farm sale. What do we see? Over 100 farmers putting their names in a drawing for two tractors at the ceiling price of $895. And three farmers drawing for a Caterpillar Diesel at its ceiling of $1,800. Can this really be the America we remember? The answer is "yes!" More than that it is the America we must know if we are to plan intelligently, aggressively, confidently.

On a Spending Spree

Christmas 1945 added a bit of thought-provoking evidence to our study of the American scene.

A Chicago newspaper summed it up this way: "A good share of the shopper's money is going into luxury items, according to the salesfolk. While the realization of postwar dreams of electric washers, mixers, irons, toasters and broilers will be missing from under many a Christmas tree, luxurious lounging robes, jewelry, fur coats and perfume are providing an answer to those who want to spend.

"Servicemen and ex-soldiers, many re-

turned after months in isolated places where their money bought them comparatively little, seem to be among the biggest spenders."

"They'll (all Christmas buyers) grab anything—without even a glance at the price tag," said a clerk with 15 years of experience in a Loop store.

A cosmetics clerk observed: "Civilians are likely to complain about taxes, but not G.I.'s. They want heavy, sophisticated scents and don't care about prices."

"Hardest member of the family to shop for is the male. There are practically no white shirts, wool socks, underwear or sports jackets to be had. Buyers are grabbing loud ties selling for $10 and $15."

In the Christmas scene just mentioned the words "spend" and "spenders" appeared—and not by accident. Those words provide the perfect cue to introduce a character whom I have done my level best to make infamous—the "passionate purchaser."

Beware Passionate Purchaser

The first warning against this menace to a dynamic sales plan was sounded in the July 1945 issue of my newsletter to Oil-O-Matic dealers. It went like this:

"Beware the 'passionate purchaser!' Watch for the man who really doesn't buy. He won't be sold! He merely spends! He's a by-product of the present abnormal situation when almost anything moves off the retailer's shelf or out of the dealer's show room. He's on fire to turn his money into goods. He is a menace only if permitted to induce flabby selling."

My August newsletter carried this follow-up: "A second warning: beware the 'passionate purchaser!' Nationwide, the industry estimates that there are about half a million of these senseless spenders —without sense of trademark significance, without sense of quality characteristics. Behind the 'passionate purchaser' and his ilk is a driving, senseless urge to spend. Don't let the 'passionate purchaser' beguile your selling sense. Don't be deluded during this giddy honeymoon. Some day—earlier than most of us think—selling will take muscles!"

Now . . . about those huge stacks of unfilled orders. I've been in sales work too long not to get a certain satisfaction or thrill out of *any* kind of orders. But I'm taking them with a grain of salt. Know why?

Personally, I know a man who has placed his order for an oilburner with five different dealers. That man doesn't intend to buy five oilburners. One of those good old American privileges is that of canceling an order. The gentleman in question will cancel four.

Much as I'd like to feel that I have discovered the only man in America who has ordered five times what he intends to buy, something tells me there are others —countless others. Discount those orders on your books, Mr. Planner. What you are feasting your eyes on may turn out to be a mirage. Full speed ahead with your plans—selling plans. Because, you see, the "passionate purchaser" is not only passionate . . . he is promiscuous as well.

And that—gentlemen—sets the day for which you plan. That day when the organized excitement will originate on the seller's side of the counter.

We are all agreed, certainly, that it is difficult, sometimes disheartening, to even think of planning when the mere words "available now!" are the most potent in sales history. But now—right now—is the time to plan. You hold your fire drill before the fire. You take your life boat stations before the ship starts to sink. You arm for defense before a war. And you plan for the selling era before it arrives. In fact, if our method of coping with a situation is not figured out before the situation materializes, the method cannot be called a plan. If we wait until a situation arises to think and to act we do not plan—we only improvise. And every man of us here today knows that there is too much at stake to risk improvising. The crying need is for a plan.

Criticize Your Plans

Let's be critical of those plans we draw up. Certainly, our own individual organization is important. But—from the overall standpoint, the American standpoint, if you will—our first thinking must be of the manner in which selling can help prevent inflation. What do selling and planning do? Simply this. The more active the selling, the more effective the selling plan, the more opportunities the would-be purchaser has to buy. And—the more opportunities the would-be purchaser has to buy, the oftener he gets his money's worth in goods. In the final analysis, that is what a successful anti-inflation campaign accomplishes. It gives the buyer his money's worth! Not for dollars that are so anemic that they must literally be shoveled onto the counter. Not in dollars so swollen in value that they get out of reach of the public. But in the honest dollars that will spread American better living to the greatest possible percentage of our citizens. That's part of the responsibility of that plan you're racking your brain to perfect. We can't shirk or escape that responsibility. Only a weakling would care to!

W. A. Matheson

Our plans should reflect what we know —not what we think we know—but what we actually know in the way of factual information. Remember, now, we have just landed in the United States. To say that we are somewhat dazzled by some of the things we have seen is putting it mildly. But what we have seen has only strengthened our determination to fashion a plan.

Now we're in for another surprise—a somewhat jolting one, I'd like to add. During our 4½ years out of the country, some of our favorite statistics seem to have lived a short but merry life.

Take the official U. S. Census, for instance. Normally, its findings would survive the prescribed ten years without getting too much out of focus. But not the 1940 Census—the one taken just the year before our imaginary trip out of the States. By 1942 the picture presented by the 1940 Census had changed—and changed radically.

Population shifted! Entire cities sprang up where often a hamlet had not existed before. Eleven million men went into the armed forces. Manpower was mobilized for war. Connecticut, for instance, led the nation in manpower mobilization with 73 percent of its 1940 working force moved into military service and war work. Michigan was a close second with 71 percent. The Bureau of Labor Statistics reported an estimated rise of 29.5 percent in non-agricultural employment during the war.

Huge Worker Shift

What is the aftermath of America's wartime mobilization? A report by Dun & Bradstreet, Inc., discloses that one-sixth of the nation—about 20,753,978 persons of working age will have to be placed in peacetime industry.

Imagine two great cities like Chicago and New York moving bodily out of the United States. Seems fantastic, doesn't it? Yet, their equivalent, in population, went into our armed forces. Approximately 5,250,00 of the 11 million Americans who served in World War II have been discharged from service since last May. The army has sent home about 4,250,000 men since V-E Day and, during the week of December 10, the navy discharged the one millionth sailor since the Japanese surrendered in August. There are still 900,000 Yanks in Europe, however, and more than 1 million in the Pacific theater.

There's one point I'd like to make right here. All of this evidence adds up to something much more significant than the necessity of up-to-the-minute statistics. Our plans must be keyed to the mass mind. In fact, let's put more—much more—emphasis on the mass mind in reaching our markets. You know, many of us in 1939, thought of markets in terms of inanimate houses, lifeless dollars, inert appliances. Our plans *must* reach the people. For what it's worth, I'd like to offer my conception of a market.

A market is the favorable response of the mass mind to your product story, in any given area.

Let's aim for the mass mind, gentlemen. We can't afford to sell one at a time any more than industry can afford to build one at a time. That's why you plan. And that is why your plan is aimed at the mass mind.

Know your competition. There is a sizable order. In those happy days of 1939, we knew pretty well who our competitors were and what they were doing. But that was in 1939! A recent survey of more than 13,000 manufacturers by Dun & Bradstreet showed that 1/3—37%—plan to manufacture new products as soon as materials are available, 29% plan to sell to new classes of customers, 46% will expand sales territories and the sales force, and 22% will use new methods or channels of distribution.

America today is certainly no paradise for planners. Obviously, we must keep our sights trained far beyond our environment. And that, too, is a mighty tough assignment because our immediate surroundings play an important part in shaping our thinking and judgment. Psychologists have proved that heredity is of minor importance in forming the human character. Environment is all-important.

So . . . here we are—a group of manufacturers, or sales executives—sales managers, if you prefer—confronted with the responsibility of planning for the future in a present in which everything is the exact opposite of the anticipated situation in which our plans will become effective.

We are operating today under an economy of scarcity—a scarcity built up through 4½ years of limited production. We are operating at a time when the purchaser is bidding—and bidding high—for what we have to sell. We are operating at a time when selling is at its lowest premium. In the face of all of these, we are planning for a time when selling will become the toughest, hardest assignment that can be given to a man.

Why Will Selling Be Hard

Perhaps you wonder at that last statement. How do we know selling is going to be hard in the future? That is a matter of logic. During these 4½ years in which we have produced nothing we have sold nothing. What is the result? The selling muscles of every salesman in America are soft and flabby and weak from disuse. During these same 4½ years, American industry has learned to produce at a faster rate—in greater volume—than ever even thought of before. So . . . here we find ourselves geared to a production greater than any ever known with less selling than ever known in modern times.

The biggest job ahead is right now—this very minute. That job is to get our thinking geared to the time and the circumstances with which we shall be surrounded when the plans we shape now will become fully effective.

Production Men Blamed

Today we are looking at the greatest pile of unfilled orders we have ever known. Today, sales departments are spending 10% of their time in unwilling selling and the other 90% in belaboring the production departments for not catching up. You all know how it's done. The questions are so pointed they should be injected rather than spoken. Questions like: "Where are all of those vaunted production abilities created during the war? If you, in the production department, are so good why can't you supply the materials for which we're begging? What evidence can you submit that salesmen have forgotten to sell when orders are piled so high you production men aren't even making a dent in them? Why," the sales department goes on, "The automobile industry planned to build half a million motor cars by the end of 1945. They wound up with probably less than 15% of that number—about 75,000."

Nylons were expected on the shelves before Christmas. Those of us who had hoped to atone for our 1945 errors, didn't do so with nylons.

Of course, there is an answer to all of this. Our production departments are just as good, just as efficient, as they were during the peak of wartime activity. Every thinking man realizes that set-backs through material shortages, strikes, and other factors are currently running the reconversion time-table two to three months behind estimates made before war's end.

For what little consolation we can squeeze out of the thought, all of us share these delays. The fact that we are not making deliveries is bad enough in itself. But add that to the effect of not manufacturing and you really have an unfortunate situation, contributing further to the deflection of our sales thinking.

If all of us here today agree on but one conclusion, our discussion will have been more than worthwhile. That conclusion is: Markets today are fluid. And a fluid market doesn't always wind up in the bottle with your label on it.

(*Continued on page 112*)

On-and-Off Burner Operation

Comfort and Efficiency Vary with Changes in Cycling

By
S. H. Hulse*

MUCH has been written about the efficiency of oil burners and oil-fired boilers, based on continuous burner operation. Although this is a reliable basis of comparison for many purposes, the majority of domestic oil burners operate intermittently with cycles of varying length. The Standard Oil Development Company's burner laboratory has been interested in finding how much influence such "on and off" cycling has on burner performance, the economy of the heating plant, and the related factor of comfort control. In connection with the development of heating oils, this laboratory has extensively studied the performance of the various types of domestic burners for fifteen years.

In an average domestic heating plant it is well known that the more nearly uniform the rate of heat output the more comfortable will be the house. With conventional intermittent burners, some improvement is often possible by reducing the firing rate so that the burner operates for a larger percentage of the time. There is, of course, a limit to which nozzle size can be reduced without causing sluggish "pick-up" or insufficient capacity for meeting extreme winter loads.

Comfort With Short Burner Pulses

Tests have shown that a very important gain in comfort is possible without reducing firing rate by simply increasing the frequency of the "on and off" periods. This causes the burner to produce heat in shorter pulses at a more nearly uniform rate over a period of time, and long heating-up and cooling-down periods are avoided. For example, the frequency of starts and stops may be controlled by the sensitivity of the thermostat as illustrated by the test results in Figure 1. These tests were conducted in a home heated by an oil-fired steam plant. Part A of Figure 1 shows the variation of the air temperature measured in the living room when using a sluggish, insensitive thermostat. Part B shows the air temperature at the same location, after changing to a sensitive thermostat operating within narrower temperature limits. For these tests, the temperature was measured at a point 25 feet away from the thermostat. In addition to the variations in air temperature, the graph shows the setting of the thermostat, which was raised at the beginning and middle of each test, and the length of the running periods of the burner. It will be noted in Part B, that the sensitive thermostat caused the burner to operate more frequently, but for much shorter intervals. This resulted in lower peaks and valleys in the temperature of the house, and a reduction in what is popularly called "cold 70."

Difficulties With Short Cycling

In view of the comfort advantage of this type of operation it is reasonable to ask why burners should not be deliberately controlled to start and stop with increased frequency in installations where comfort would be improved. Unfortunately there are difficulties in such an operation in the average heating plant.

When a burner is operated at steady load continuously, the combustion chamber becomes heated to a high temperature which greatly aids combustion, reduces soot and smoke, and provides the maximum overall efficiency. However, when the same burner is operated intermittently, certain heat losses are entailed that are not found at all with continuous operation. Among the more important of these are "stand-by losses" including loss of heat up the stack during the "off" period, and losses due to the insulating effect of the increased amount of soot deposited on the heating surfaces.

In order to evaluate the latter effect, a series of three tests were run in the laboratory. A typical pressure atomizing burner was installed in a domestic boiler equipped with accurate means of measuring fuel input, steam output and stack losses. A commercial No. 2 fueloil was used, the specifications of which are listed in Table 1. The burner was operated intermittently on a predetermined cycle by means of an electric timing device. In the first test, the burner was fired for 10 minutes each half hour, the test continuing for over 8 days. The air supply to the burner was adjusted for trace smoke at the stack, the observations being made near the end of the burning periods. In the second and third tests, the burner was operated for only 10 seconds every 3 minutes, continuing for one day and two days respectively. As compared with the first test, slightly less excess air was used on the second test, and slightly more on the third test. In all cases the smoke density was well below that permitted by the Commercial Standard for burner tests.

The results of these cycling tests are presented in Table 2.

They may be summarized as follows:

(a) When set for trace smoke, the burner in all cases caused considerable accumulation of soot on the heating surfaces, resulting in a rise in stack temperature.

(b) The insulating effect of the soot in all cases appreciably impaired the thermal efficiency of the plant, as measured at the beginning and end of each test.

(c) The loss in fuel economy in the third test (960 starts) was almost twice as much as in the first two (400 and 480 starts, respectively).

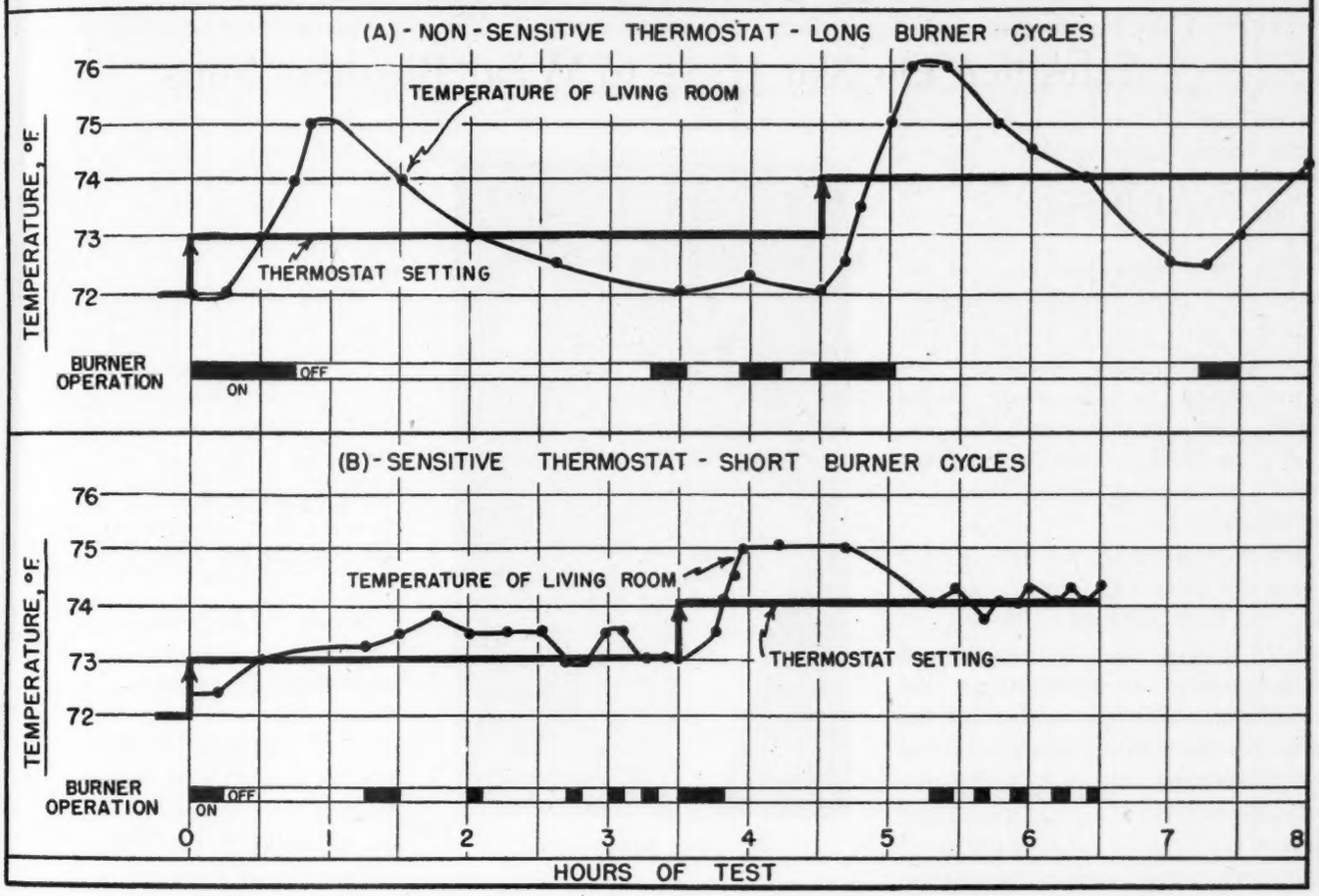
The loss in economy clearly did not depend on the amount of fuel burned, as over 40 times as much fuel was consumed on the first test as on the second, and over 20 times as much on the first as on the third. It is concluded that the loss depended on the *number* of *starts* and *stops* which, for the three tests, were approximately proportional to the reduction in steam output per gallon of oil fired. It appears that the smoke given off by conventional burners when starting and stopping is responsible for this situation.

These results show that typical burners cannot be operated on a short cycling basis without increasing the progressive loss in efficiency associated with starts and stops. This is one of the important restrictions at present faced by oil heating in providing the maximum in comfort.

*Esso Laboratories, Standard Oil Development Co.

FIGURE 1

EFFECT OF LENGTH OF CYCLE ON COMFORT



To a limited extent, soot deposits can be reduced by increasing the excess air to the burner, and usually this is the only recourse open to the service man. The results of the third test in Table 2 show that when operating at a CO_2 level even as low as 9.1% the sooting was not appreciably reduced. Much more excess air, with consequently poorer combustion efficiency would have been required to reduce sooting effectively.

There is a challenge to burner designers in this indication of the importance of smokeless "on and off" performance. Emphasis on the development of means of controlling this characteristic is fully justified by the potential improvement in efficiency. But such a development would not depend for its importance on fuel savings alone. It should profoundly affect the public's acceptance of oil heat as clean heat, a reputation that is jeopardized when a neighbor's chimney regularly gives off puffs of smoke from a poorly functioning burner. Finally it would permit burners to be operated economically on shorter cycles. After suitable burners are available, the designers of burner controls can be called upon to furnish more sensitive thermostats which, by operating the burner more frequently, will contribute to an overall gain in heating comfort.

Acknowledgment is due to H. G. M. Fischer, Assistant Manager of Research and Development, Standard Oil Development Company, for guidance and constructive criticism, and to B. A. Hollenbeck for supervising the laboratory work described herein.

TABLE 1

Inspection of Number 2 Fueloil Used In Tests

Gravity, °API	32.8
Flash Point, P.M., °F.	171
Color, NPA	2½
Sulfur, %	0.80
Diesel Index	42
Carbon Residue on 10% Bottoms, %	0.14
Viscosity SSU @ 100°F., Sec.	34.8
ASTM Distillation	
Initial Boiling Point, °F.	382
10% Point, °F.	445
50% Point, °F.	500
90% Point, °F.	581
Final Boiling Point, °F.	627

TABLE 2

Results of Intermittent Tests

Boiler Used	Conversion	Conversion	
Nozzle Size, GPH	1.5	1.5	
Burner Cycle:			
Burning Period	*10 Minutes*	*10 Seconds*	
Idle Period	*20 Minutes*	*2 Min.—50 Secs.*	
Number of Cycles	400	480	960
Duration of Test	8-1/3 Days	1 Day	2 Days
Gallons of Oil Burned on Cycle	102.0	2.3	4.8
Performance at Start of Test:			
% CO_2	9.9	10.6	9.4
Stack Temperature, °F.	668	650	675
Performance at End of Test:			
% CO_2	9.9	10.4	9.1
Stack Temperature, °F.	756	751	768
Insulating Effect of Soot:			
Increase in Stack Temperature, °F.	88	101	93
Reduction in Steam Output per Gallon of Oil Fired, percent of Original	5.1(a)	5.4(b)	9.8(b)

(a) Steam measured while operating on cycle, first day and last day.
(b) Steam measured during continuous runs before and after the cycling period.

Let Them Earn It

Salesmen Do Not Have to Wear Business Suits

By
G. J. Burrell

POSSIBLY you never have heard of the Burrell Oil & Air Conditioning Corporation. It is not a name to awe large segments of the population, and we are constantly trying to make more people familiar with it in and around Harrison, N. Y., the locality where we are best known. But some of us have learned to like the outfit a lot.

We have answered oilburner service calls in the name of the company at 3:00 a.m., and have delivered oil in blizzards to fulfill those promises of complete and efficient service we made to get the original order. We have worked half the night to sell oilheating equipment, and have done favors for customers while the Little Woman tried to keep the dinner warm.

In short, we are a typical eastern oilheating dealer. We sell oilburners, oil, heating equipment, coal and service. We also sell and install insulation, cooling equipment and allied products. Our small bulk plant supplies our three retail delivery trucks, and a few of our competitors in the vicinity pull out of the plant. Besides the three drivers who make our retail deliveries, there are three oilburner servicemen, two men who operate the bulk plant, the usual small office staff, and one salesman. I don't mention the salesman last because he is least important, because we are all a part of a team, but only because this conversation is about the rest of the crew.

Suburban Business

Working a few miles north of New York City we are, nevertheless, subject to most of its influences. Though the town itself is small, we serve an upper middle class suburban area, comfortably well-supplied with money, much of which comes out of the Big Town. Our kids go to school with—and play ball against—other kids from half-wealthy families. Many of the members of the lodge have paid off their mortgages, and Mamma has to compete for chops at the local butcher's against Mrs. Van Blotz.

Gus Burrell

But don't get me wrong. We are not class-conscious. We are not snooty. This is just to introduce you to our customers. They are swell folks and we like them. The point is that we people in the oilheating business locally like to have a few dollars in our pants pockets, though we don't leave town every morning on the 8:02 and come back on the 6:16. The temptation always is there to ask for every penny the traffic will bear. That was what brought Eddie into my office one afternoon last summer.

Eddie—which is not his name—had been with us for seven years. (The average for the crew is six years, so the turnover isn't too great). He had that uneasy look about him that a fellow gets when he has to spill some bad news.

"Boss," says Eddie, I've got to have more dough. I'm sorry to have to let you have it this way because I know you've got other things to worry about, but that's the way it is with me. Prices of everything are going up, and I can't make my fifty bucks stretch over the week any more. When the kid broke his wrist a couple of weeks ago, that cooked me. There's nothing to pay the doctor with, and that ain't good.

"This is no beef," Eddie continues, "because I know it is tough to keep the place open at all with no burners, and prices frozen on everything, so I stopped in at Randall Electric yesterday and they've got a spot in the shop for me at $60 a week. That will be a big help, but I don't want to leave you without some notice. What about me quitting a week from Saturday night?"

In case you don't remember, it was no laughing matter last August to lose a good serviceman who could double as an oil driver. But there was sound common sense in everything Eddie had said. I gave him the old stuff about the war was going to be over soon, and Randall Electric would let him out when their contracts were cancelled. We went over the guarantee of 52 weeks' pay every year with Saturdays off in the summer, and how everybody was welcome to dip into the cash-drawer to get over emergencies like broken wrists, new babies and visits from a mother-in-law.

"Yeah, that's all right," Eddie persisted with the logic of a serviceman, "but the loans out of the till have to be paid back, and I don't have anything to pay with."

We left it that Eddie would leave a week from Saturday night.

Conditions Change

The next Tuesday night the Japs gave up and the war was over. Postwar had started and all the plans I'd made were supposed to be getting under way. High on the list was the building of a sales force to roll in those orders we wanted. Manpower still was tight and nobody could make a living on commission with nothing to sell, even though there was no longer a law against selling oilburners. Randall Electric had laid off more than half their force before Eddie could get to the job, but he knew he was more than welcome to stay with us. Even so, his problem hadn't been solved, and a salesman or service

man with a problem on his mind can't give full time to his work. It was obvious that the other men were thinking about ways and means of getting more money, too.

The boys wanted more money; I wanted more business; there were no salesmen, so it took no great feat of reasoning to bring forth an idea: Let the servicemen and drivers sell, and give them a commission on the business they bring in. If they want more money, here is a way for them to get it. Then the idea expanded. Why confine commissions to servicemen and drivers? Why not encourage the boys at the bulk plant and the girls in the office to sell, too? All of them met people outside. All of them belonged to clubs, went to church, knew the neighbors and had their own ever-changing stream of contacts with the public. All of them had opportunities, on or off the job, to talk to people, and that's all a salesman needs.

The Plan Evolves

After a little cutting and trying we worked out a plan for everybody. It has been changed in only one detail since it was adopted, and it goes like this:

Every employee who brings in an order, or even a good lead which is later closed, got 5% commission on the sale. This applies to new installations and to equipment sold to old customers—with one important exception. There is no commission paid on replacement burner parts. I don't think the boys would chisel, but there is no logic in putting the temptation before them. They have no control over break-downs, and it takes no selling to replace a burned-out motor or transformer when the burner is dead and the house is getting cold. The boys agree that those are not sales, and they are due no commission on somebody's hard luck. The addition of a draft regulator, for instance, where the plant does not have one, or the sale of boiler and pipe insulation to improve the efficiency and performance of a job does bring a commission. Also, we pay for the replacement of an old conversion installation with a complete unit. We have had several of these jobs since the commission arrangement went into effect and we feel that such a replacement is to the customer's advantage since it gives him better performance from his heating plant, and usually saves him money on his fuel bill. That is the type of job a serviceman can sell best. Customers respect the word of a good mechanic in whose hands they are entrusting the health of their families, and the safety of their property. Here is an expert who has come to their rescue in periods of emergency. He has brought heat into the house when they need it most. They know that the serviceman knows his business, and when he advises them on changes they should make for more comfort or economy, they listen—and buy.

Drivers in a neighborhood are your best oil salesmen. If your customers get oil before they run out; if your customers are satisfied and warm, the driver can do business with the neighbors. For a fuel customer we pay a flat rate of $5. We do have the stipulation that at least 1,000 gallons of oil has to be delivered to a no-contract customer before the commission is paid, but the man gets his money when the account has proved good. There is no commission on casual drops in a neighborhood because the customer tells the driver the lady next door is "almost out of oil."

Commission on Leads

About half the commissions earned come from signed orders the men bring in. The other half is paid on leads I close at the man's request. The flat rate of commission tends to encourage a man to ask for help when he needs it, rather than take a chance on losing the sale trying to close it alone. When any employee registers a prospect the sale is his when it is made. There are very few "house" accounts. In case of doubt we don't argue. The man gets the sale. It is much better that way.

We add up the commissions and pay off at the end of every second month. The old custom still stands around the office: If a man needs money to help him over an emergency, it is there for him, but now he can see a way to pay it off without dipping into his Friday night envelope. Then we had a contest for a War Bond at Christmas for the man who turned in the most business. Though the commissions were more important than the prize from a monetary point of view, there was some spirited competition to get the orders in before the deadline.

At the end of the year I scaled up the results of the first four months of our commission arrangement. The average wage of eleven people for their regular jobs is $50 a week. But in addition to their salaries, commissions had run from an average low of $12 a week to a high of $20 a week for each employee. Averages are important only to the boss, but the actual take that Eddie has earned (being one of our best) is far beyond anything he ever expected he could earn with us, or anybody else.

As for the company, everything is dandy, thank you. We are getting more business than ever before. Everybody is pulling hard for sales and more sales, and I've stopped looking for salesmen, and stopped worrying about how to pay them.

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"Extra" Savings Mostly In Lower Income Brackets

SAVINGS which have accumulated in the bank accounts of individuals during the last four years are estimated to have reached $140 billion. Incomes were unusually high and wartime shortages of goods made it impossible to spend as fast as many would have liked. It is believed that the normal increase in savings would have been about $70 billion in the war years, and a combination of circumstances has about doubled the "normal" with "extra" savings.

These extra savings are not distributed evenly across all income classes. More than 57% of the extra $70 billion savings is in the hands of individuals with incomes of $5,000 or less a year, though this group holds less than 30% of all savings. The following table shows the estimated distribution in billions of dollars of normal and extra savings.

Income	*Normal*	*Extra*	*Total*
Under $2,000	0	11	11
$2,000 to $5,000	20	30	50
$5,000 to $10,000	19	20	39
$10,000 and more	31	9	40
All classes	70	70	140

In 1939, the last year for which a study was made, families with incomes of less than $4,500 bought 85% of all the domestic oilburners sold in the Metropolitan New York area. It is probable that this percentage would be higher for the country as a whole.

Vaporizing Burner Calibration

Proper Oil Feed Rates Essential to Good Pot Burner Operation

By
Frank J. Coonan

Fourth and last in a series of articles on the service of pot-type vaporizing oil-burners.

VAPORIZING units all look alike, furnaces are rectangular or square, and water heaters are round. How can we tell by looking at a unit, with which we are not familiar, what its characteristics are? Does it burn a low fire or a pilot fire? What is the high fire flow rate, and the draft requirement? What does it profit us to know how we should calibrate these units if we do not know the flow rates or draft setting?

These are the type questions which intelligent service men are sure to ask, whenever vaporizing burner service is being discussed. They are darned good questions, considering the many different make furnaces and water heaters which are in the field, and how difficult it is for a service man to know all of the pertinent information relative to so many types of equipment. Lack of information is one of the major reasons why service men dislike these burners. With mechanical equipment tried and proven methods of flame adjustment have been made available to them, while with vaporizing equipment, although they might have been fully instructed and supplied with complete information on the furnaces and water heaters, their own Company installed, when they encounter a unit with which they are not familiar, it is impossible for them to do a good job when they do not know the oil flow rates and the draft requirement.

It is true that instruction cards were shipped with each unit, and were supposed to be permanently placed in the basement, but in many cases they cannot be found, either having been discarded by the installation crew, or the home owner, or removed by a serviceman who wanted the information they contained.

Think what this means to a service organization such as our own, handling service on numerous manufacturers' furnaces and water heaters, with varied pilot, low fire and high fire settings.

Primarily our company is in the oil business. The efforts of our service department are expended towards making equipment operate with as few service calls as possible, knowing that satisfied service accounts mean satisfied oil accounts. We are not interested in rendering service on equipment which will not satisfy either our customers or ourselves. That we have been able to accomplish this goal not only on our own vaporizing equipment, but also on competitive equipment, is substantiated by an analysis of our service files, which show that over 80% of the vaporizing equipment we now have under service has been installed by other companies. Most of this business came to us through the reputation we earned with our own equipment, which had been installed and serviced as well as we knew how.

Service Gets Gallonage

We had turned down a great number of requests to service competitive equipment before we realized the tremendous oil business which could be ours, provided we could properly service these burners. An analysis of the Philadelphia area pointed out to us the equipment which had been installed in sufficient quantities to warrant the necessary educational program. The service department was instructed in the operating principles of these different type vaporizing burners and constant level float control valves in general. They were taught to pick out and correct installation defects and were supplied with flow rate charts, which contained the necessary calibration information on each manufacturer's units. These charts contained data we had received from manufacturers, plus a few common-sense rules we had previously experimented with, and had successfully adapted to our vaporizing service work.

Instructing our service personnel was not difficult because we took each individual unit separately, while in these articles we are attempting to cover the entire field. The writer will try to outline a breakdown coverage of the essential information, which should enable anyone sufficiently interested to make up flow rate charts for the use of their service personnel, on almost any piece of vaporizing equipment.

Natural Draft Burners

The air for combustion is supplied entirely by the natural draft suction of the chimney. The draft requirements of these units are generally high, and they are seriously affected by any condition which causes a reduction in the available draft.

High Fire Draft

High fire draft can be defined as the minimum draft necessary to supply sufficient air for combustion, to properly burn the maximum high fire.

The available draft must always be co-related with the high fire oil flow rate. Suppose for example a furnace called for a high fire flow rate of 48 cubic centimeters per minute, and the draft requirement was .08, this would then mean that this draft setting was capable of supplying all of the air necessary to burn 48 cubic centimeters of oil. If more than sufficient draft was available, it could be reduced by means of the draft regulator. But if the highest draft reading it was possible to secure was .07, it becomes vitally important to keep a balanced air-oil ratio, by reducing the high fire flow rate proportionately to the draft deficiency. As .07 represents 82.5% of .08, consequently we have only 82.5% of the air, which is needed to burn 48 cubic centimeters of oil. Therefore, the oil flow rate must be reduced to 82.5%, or to 42 cubic centimeters, to maintain the correct air-oil ratio.

When the available draft is less than required, reduce the high fire proportionately.

The draft requirements of natural draft vaporizing burners may seem high, when compared to mechanical burners, but they actually require less than 50% of the draft necessary to get the maximum

utput from a coal-fired unit. Any chimney properly built and properly sized, will easily supply more than sufficient draft for any vaporizing burner.

Note: Water Heaters — During the summer months draft deficiencies in connection with water heaters are oftimes experienced. It is usually a mistake to follow out the proportionate high fire cutback rule for a poor draft condition found during the summer period, for two reasons: (1) the firing rate is usually so small that the considerable reduction which would quite often be called for is almost sure to result in complaints of insufficient hot water; and (2) this poor draft condition does not exist after cold weather sets in and the central heating plant is in operation. Therefore, if the fire were to be cut back during the critical summer period, when draft conditions improved during the winter, the air-oil ratio would be completely unbalanced. There would then be too much air for the reduced firing rate, which would result in a most unsatisfactory winter operation. The correct answer lies in bettering the summer draft condition, by getting higher temperatures at the base of the chimney.

When a water heater and a central heating plant are both connected to the same flue, the inoperative heating plant acts the same as an open-draft regulator. Not only is the available draft divided between the two units, but the basement air which is pulled through the heating plant dilutes the temperature of the gases, leaving the water heater, resulting in a low flue temperature and resultant low draft.

To better summer draft conditions where necessary, the smoke-pipe of the heating system should be disconnected and capped, and the water heater smoke-pipe should be insulated if it is unusually long. Doing one or both of the above will invariably insure sufficient draft for water-heater operation during the summer months.

Mechanical Draft Burners

The air for combustion is supplied by a fan. The chimney is used primarily to carry off the products of combustion. Although the capacity of the fan is definitely affected by either high or low draft, the draft requirement is usually so low that it is unusual to encounter draft deficiencies.

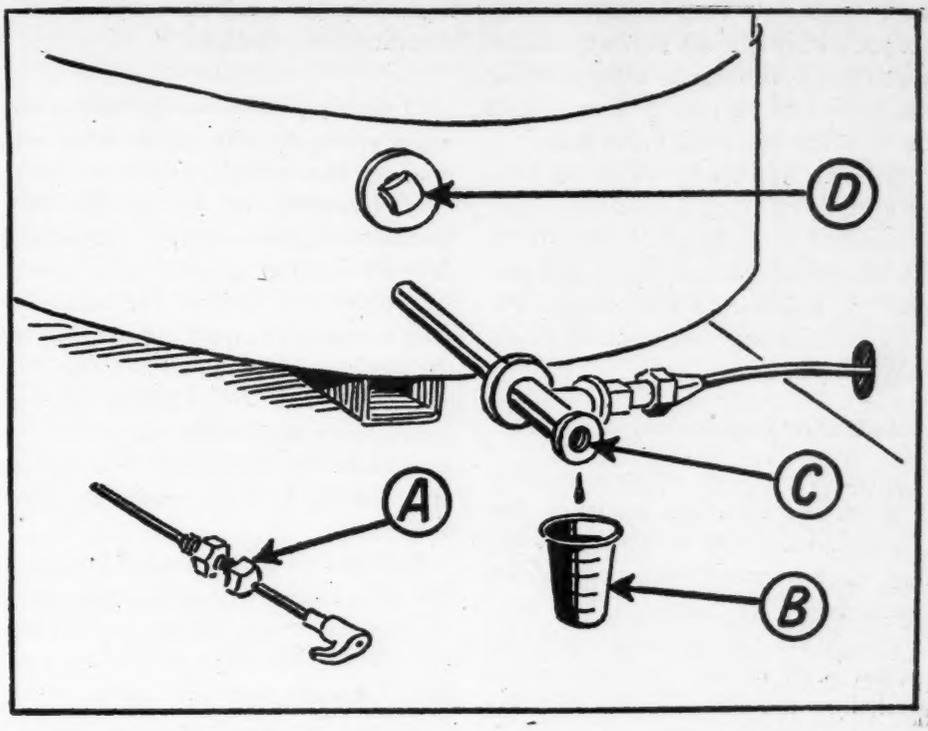

Fig. 4. *A—cleaner rod; B—c.c. graduate; C—test tee; and D—lighter door.*

Pilot Fire Burners

The pilot fire of a vaporizing burner is not necessarily a clean fire. It burns from a liquid pool of oil on the base of the pot and has a tendency to smoke and form carbon on the lower baffle. But so long as this condition is held within reasonable limits, it becomes unimportant, as most of the carbon is burned off the baffle, when the unit changes from pilot to high fire operation. There are only two important items in connection with pilot fire oil flow rates: (1) that it is sufficiently high to continue burning; and (2) that it is not so high that it causes excessive carbon formation or overheating.

For pilot fire burners we take the manufacturer's pilot flow rate and make this figure our pilot fire minimum. To this minimum we add a leeway of 20 c.c. per hour, and this higher figure becomes our pilot fire maximum. This maximum does not cause excessive carbon, nor will it cause overheating, but it does allow a service man to set an accurate pilot, anywhere between these two figures, without the tediousness of attempting to arrive at the exact c.c. setting the manufacturer calls for.

Low Fire Burners

The low fire of a vaporizing burner is a scientific fire, with a definite pre-mixture of air and oil vapor. The important items in connection with low fire oil flow rates are: (1) that it is sufficient to cause the low fire to elevate and burn completely around the lower baffle; and (2) that it is not so large that it causes overheating. The low fire of a water-heater should be a blue flame burning in suspension. It is not intended as a heating flame. The low fire flame of a furnace is usually blue only at the base, if at all. The low fire of a furnace is meant to be a radiant flame which supplies some usable heat. A low fire should never burn on the bottom of the pot. For low fire burners we also take the manufacturer's low fire flow rate, and make this figure our low fire minimum.

For water heaters burning a low fire we allow a leeway of 20 c.c. per hour between our minimum and maximum setting. For furnaces, we allow between 1 and 2 c.c. per minute.

The point at which a low fire flame will elevate from the base of the pot to the lower baffle is rather critical, and varies considerably with oils of different characteristics. Therefore we recommend adjusting the flow rate to approximately the mid-point between the minimum and maximum, then start the unit on low fire and observe the flame; if it is burning completely around the lower baffle, no further adjustment is necessary. If the

flame continues to burn on the bottom of the pot, with the fire still burning, increase the oil flow by turning the adjusting screw not more than 1/8 turn at a time, until the flame elevates to the lower baffle.

High Fire Maximum—Means the highest firing rate a unit has combustion space to handle. It is the firing rate called for in manufacturers' manuals which will produce the maximum B.T.U. output. Firing above this rate will result in smoke, soot, and puff-backs.

High Fire Recommended Setting

Invariably, service manuals emphatically tell you that their maximum flow rate should never be exceeded, although they do recommend reductions within reason below the maximum flow rate. Our high fire recommended setting on natural draft burners conforms wholeheartedly with the ideas of manufacturers who advocate a setting of approximately 15% below their maximum flow rate, even though the full draft requirement is available. We follow this 15% cut-back rule on all of our natural draft equipment, whether they be furnaces or water heaters, and have found that it eliminates the possibility of a dirty fire during the fall and spring, when draft conditions are not always stable. On mechanical draft burners we do not recommend cutting back the high fire flow rate more than 10%, because the flame is relatively small and of high temperature, and if the firing rate is cut back too far, the fire will be pulled down inside the pot, which will injure the burner metal. The purpose of this 10% cut-back is to make these burners more flexible. If a lighter than normal delivery of oil is made, they will not be overfired, and if a heavier than normal delivery of oil is made, the lowered flame gives the necessary higher vaporizing temperature on the base of the pot. We have never encountered a case where this cut-back policy caused a complaint of insufficient heat in severe weather. The average vaporizing furnace installation is not in a position to deliver anywhere near its maximum output at the time it is most needed. By mid-winter the burning efficiency is usually poor because of a dirty pot, and the heat which is generated must fight through insulating soot deposits before reaching the distribution system. This high fire cut-back policy results in better burning, a cleaner unit, considerably higher average overall efficiency, and consequently lower fuel bills.

Condensing the above information we arrive at the meanings of the terms and headings used in our calibration charts:

1. *Natural Draft*—The air for combustion is supplied entirely by the natural draft suction of the chimney.

2. *High Fire Draft*—The minimum draft necessary to supply sufficient air for the maximum high fire.

3. *Mechanical Draft*—The air for combustion is supplied by a fan.

4. *High Fire Maximum*—The highest firing rate the unit has combustion space to handle.

5. *High Fire Recommended Setting*—The firing rate arrived at by cutting back the manufacturer's maximum flow rate, by 15% for natural draft burners, and 10% for mechanical draft burners.

6. *Pilot Fire Minimum*—The smallest pilot that will continue to burn.

7. *Pilot Fire Maximum*—The largest pilot that will not cause excessive carbon formations, or overheating.

8. *Low Fire Minimum*—The smallest low fire that will elevate, and burn completely around the lower baffle.

9. *Low Fire Maximum*—The largest low fire that will not cause overheating.

10. *Pilot Fire In Drops* (can also be used for low fire of water-heaters). This column is merely for convenience in allowing a quick approximate check on the pilot flow rate.

Under no condition should the final setting be made by counting drops. A cubic centimeter graduate should be used for at least a six-minute check for the final pilot setting. The number of drops in a cubic centimeter will vary considerably with oils of different specifications; therefore, attempting to calibrate a pilot by counting drops alone will oftimes result in a false c.c. setting.

The adaptation of these ideas to specific manufacturers' furnaces are shown in Figures 1, 2, and 3.

The need for calibration charts on future units could be totally eliminated if manufacturers would mount in a prominent place on each unit a metallic plate on which was imprinted their firing rates, draft requirements, oil recommendations, etc. This would make the job of servicing their equipment much easier than it is at the present time.

FIGURE 1

FLOW RATE SETTING ON LOCHINVAR NATURAL DRAFT FURNACES

Model No.	High Fire Maximum	High Fire Draft	High Fire Rec. Setting	Pilot Minimum	Pilot Maximum	Pilot In Drops
60	31cc/1Min	.06	27cc/1Min	8cc/6Min	10cc/6Min	25-32/1Min
80	47cc/1Min	.06	40cc/1Min	8cc/6Min	10cc/6Min	25-32/1Min
100	63cc/1Min	.06	54cc/1Min	8cc/6Min	10cc/6Min	25-32/1Min

FIGURE 2

FLOW RATE SETTING ON LOCHINVAR NATURAL DRAFT WATER HEATERS

Model No.	High Fire Maximum	High Fire Draft	High Fire Rec. Setting	Pilot Minimum*	Pilot Maximum	Pilot In Drops
20	12½cc/1Min	.035	11cc/1Min	7cc/6Min	9cc/6Min	22-28/1Min
30, 40, 50	15cc/1Min	.035	13cc/1Min	7cc/6Min	9cc/6Min	22-28/1Min

*If both the pilot fire and the high fire are to be adjusted, the high fire must always be calibrated first.

FIGURE 3

FLOW RATE SETTING ON NORGE NATURAL DRAFT FURNACES

Model No.	High Fire Maximum	High Fire Draft	High Fire Rec. Setting	Low Fire Minimum	Low Fire Maximum
OA63, OB60, OC60	40cc/1Min	.08	34cc/1Min	6cc/1Min	8cc/1Min

FLOW RATE SETTING ON NORGE MECHANICAL DRAFT BURNERS

OD70	40cc/1Min	.02	36cc/1Min	6cc/1Min	8cc/1Min
OE80	46cc/1Min	.03	42cc/1Min	6cc/1Min	8cc/1Min

Under no condition should the high fire on the above two models be reduced more than 10%. The low fire on all Norge furnaces is a low fire and not a pilot fire. It is the smallest fire that will burn completely around and above the lower baffle. It will be found to be between the minimum and maximum flow rate given above. The low fire must not burn on the bottom of the pot.

Mechanics of Calibration

The necessary tools to properly calibrate these burners include a watch with a second hand for timing the oil flow, a small graduate of approximately 25 c.c. capacity for checking pilot and low fire flow rates, a larger graduate of approximately 100 c.c. capacity for checking furnace high fire flow rates, open end or adjustable wrenches, screw drivers, a spirit level and a draft gauge. The oil flow should be measured either at the constant level valve outlet, or preferably at the test tee of the oil feed line, after removing the cleaner rod assembly or the drain plug, as shown in Figure 4.

Whenever a change is made in the position of the low rate adjusting screws, always wait at least three minutes before taking a c.c. reading, in order to allow the C.L.V. to adjust itself to the change.

The final pilot fire and water heater low fire flow rate adjustments should be checked with a graduate for at least six minutes.

The final furnace low fire flow rate adjustments should be checked at least three minutes.

The final high fire flow rate adjustments should be checked for from one to three minutes, depending on the volume of oil flow.

The final draft adjustment should be made after the unit has been operating on high fire for sufficient time to generate more than the minimum draft requirement.

Customer Education. To eliminate unnecessary service calls, customers should be thoroughly instructed on the following:

1. The proper grade of oil to use;
2. How to light the unit and also how to turn it off;
3. To remove the drain plug or cleaner rod assembly, and drain the pot before attempting to light the fire;
4. To always start the unit on pilot or low fire;
5. To operate the cleaner rod periodically, and to always leave it in the pulled-out position;
6. Never to touch the adjusting screws or draft regulator.

Every customer should be supplied with a lighting torch, which can be made from a piece of stiff wire of the appropriate length, with a piece of asbestos rope twisted around one end. By dipping the asbestos in fueloil and lighting it, and placing the lighted end on the base of the pot, the unit can be started up, after which the torch can be removed, thus keeping paper or rag ash from accumulating on the bottom of the pot. Now is the opportune time, while competitive units are still not available, to put on a campaign to get these units into good operating condition. By correcting installation defects, and properly calibrating these units, and then supplying them with the right grade of oil, you can change the owners of vaporizing burners from dissatisfied knockers to satisfied boosters of oil heat.

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Commerce Dept. Outlines Credit for Small Business

HOW SMALL BUSINESSES may obtain credit and capital for sound business ventures is explained in a bulletin on "Credit Sources for Small Business" just issued by the U. S. Department of Commerce.

The private commercial bank is still the main source of business credit, the bulletin says, and small businesses have even more reason to turn to their banker for credit help than have large companies which have increasingly relied on internal financing and on the issuing of securities to meet their capital and credit needs.

The bulletin discusses in detail the types of credit extended by such diverse institutions as banks, industrial banking companies, small loan companies, factors, sales finance companies, miscellaneous finance companies, insurance campanies, equipment manufacturers, wholesalers and similar suppliers, individual investors, investment bankers, corporations seeking affiliates, branches or outlets, the Reconstruction Finance Corporation, Federal Reserve Banks, Smaller War Plants Corporation, Federal Housing Administration and community industrial development groups.

Many banks are now setting up special small business departments, according to the bulletin which states that in the choice of a bank the small business man should "choose a banker who possesses character and leadership, one who is willing to assume a risk providing there is a reasonable chance of repayment; a progressive banker, one who is alert to current industrial trends, willing to make loans for new products and more efficient processes

"Such a banker," the bulletin says, "knows that in a world of rapid change, risk is a matter of careful analysis, not merely of traditional soundness."

The community banker, who more often than not is a small business man himself, may be more receptive to the needs of the small business man than the larger city bank, the bulletin says, but sometimes the larger banks quote more favorable rates and the only answer to compare.

Once the small business man has chosen a banker he should consult him frequently, visiting him at his office and inviting him to return the visit, the bulletin advises, and adds:

"Show him around. Invite him to look over your books. Freely explain your plans to him, especially if they involve expenditures out of the ordinary. Do not try to conceal difficulties from him. It is part of the banker's code not to betray confidences. Mutual frankness is the first basis of good banking relations."

Busines men who can qualify should be able to turn to their bank for one of the following types of loans, according to the bulletin: character loans, term loans, installment loans, loans on accounts receivable, loans secured by warehouse and field warehouse stocks and equipment loans.

The difficulty small businesses often encounter in securing adequate credit is also discussed, and the bulletin notes that "small concerns have often had to resort to the unsound practice of using renewable short-term commercial loans for working capital, for long-term seasonal capital, or even to take the place of fixed long-term capital."

In general, the bulletin says, the business man is justified in seeking a loan when he can use it to cut costs or otherwise increase efficiency by more than the cost of obtaining the additional funds, but he should not forget that "other things being equal the company that gets the credit it needs at the least expense wins."

The booklet is designed for widespread distribution among small business men and may be obtained by banks, or other financial institutions wishing to distribute it, or by individuals themselves, from the Superintendent of Documents, Washington 25, D. C., or from Department of Commerce field offices at 15 cents.

59 EAST VAN BUREN STREET
CHICAGO 5, ILLINOIS

DEAR CUSTOMER: FEBRUARY 6, 1945.

Considering the extremely cold weather of this season, including that of December and January just past, and also considering the recent difficult delivery problems occasioned by so much snow and ice, we feel that, *for the most part*, our customers in metropolitan Chicago have fared pretty well.

There have been some exceptions, of course, where available valid coupons were insufficient to maintain comfort, but in most of these cases, we believe that the OPA local rationing boards have issued the necessary extra coupons to which fuel oil consumers were entitled because of the "hardship amendment" of the fuel oil rationing regulations.

So far as we have been able to be of service, we have been glad to assist our customers with information and advice when their problems were made known to us.

Since Period 4 and 5 coupons became valid February 5th and since warmer weather will surely be with us sooner or later, we have reason to feel that "the worst is over." We are deeply appreciative of the co-operation our customers have given us in making their fuel oil rations last as long as possible under the difficult conditions of the last several weeks.

Anticipating that each heating season will trend toward conforming to average, the figures representing an average heating season, as used by the OPA, and on which rationing restrictions are based, indicate that to February 1, consumers should not have used more than 55% of their entire ration. Weather Bureau figures, however, show that approximately 60% of a local average season has expired as of that same date. This is due to the severity of this winter as compared to average. making *continued conservation in the use of fuel oil even more necessary*

Mobil Heat

SOCONY-VACUUM OIL COMPANY, INC.
FRANK E. SPENCER, *Manager*, Fuel Oil Department

59 EAST VAN BUREN STREET
CHICAGO 5, ILLINOIS

March 6, 1945.

DEAR CUSTOMER:

As of March 1st, in the Chicago area, it is figured that on an *average*, there is 28% of the heating season remaining. Although this season has tapered off to a point where, as of March 1st, it was not so much colder than average as was the case a month earlier, it was still running about 5% above average in heat demand. As basic Fuel Oil rations were figured by O.P.A. according to an average heating season, the fact that the heat demand this season continues to *exceed normal* must be overcome by continued cautious consumption.

Furthermore, if oil, independent of heat requirements, is the means of *heating water for summer use*, such a requirement is not included in these calculations. To prevent confusing next season's ration budget, *both* the remaining heat and summer water heating needs *should* be provided for until August 31, 1945, by this season's coupon allowance.

The fact that in many cases, users' coupons have been entirely used up *does not necessarily* mean they will not be able to finish the season within their budget. With the heating season this close to completion *in numerous cases* the oil in storage will be found sufficient to meet the requirements of the remainder of this season.

Mobil Heat

We will continue to be of service to you to the extent of our ability, in furnishing information and advice, if any further problems are made known to us.

SOCONY-VACUUM OIL COMPANY, INC.
FRANK E. SPENCER, *Manager*, Fuel Oil Department

59 EAST VAN BUREN STREET
CHICAGO 5, ILLINOIS

APRIL 18, 1945

DEAR CUSTOMER:

The month of March certainly did its part in averaging out this winter to conform to normal. In fact, it was the warmest March on record (50% warmer than last March and 43.2% warmer than an average one).

Because of the unusually mild weather since March 1st, this *season* as of April 15th was 7.1% warmer than an average season.

According to OPA figures, after April 15th, 9% of a fuel oil consumer's allotment, in coupons remaining unused plus oil in his storage, should see him through the season ending August 31st, 1945. This should provide for water heating during the summer where necessary.

SPECIAL CAUTION: If the oil available to you under this season's ration will not completely provide for your needs to next September 1st, *do not* be influenced to use a part of your 1945-46 allotment to finish out this season. Under present OPA rationing regulations, this should *not be necessary*.

The cooperation extended by our numerous customers by returning promptly their signed 1945-46 Mobilheat Fuel Oil Agreement cards recently mailed them is very gratifying. If you haven't done so yet, won't you please send your card in at once? The prompt return of these cards assists us greatly in making preparations for next season during which we must continue to handle the details of Fuel Oil rationing.

Mobil Heat

SOCONY-VACUUM OIL COMPANY, Inc.
FRANK E. SPENCER, *Manager*, Fuel Oil Department

Write to Your

WHAT CAN ACCOUNT FOR the big difference in rate of customer turnover between various fueloil distributors, and and sometimes between various markets? Obviously, if everyone knew the answer to that question, very few customers would ever change dealers. New customers are expensive to get, yet the fueloil man feels that he definitely should end each year with more customers than he started with, which means that he must more than replace those he lost.

Customer turnover with some distributors in normal times has run as high as 25 to 30 per cent, with others as low as two or three percent. However he may go about getting these new ones, it is pretty generally agreed that the cost of getting the new customer, on direct sales operations, is higher than the net profit realized from him the first season.

Starting in April or May of this spring most of the larger fueloil distributors are going to have salesmen out after contracts. First they will try their own customers, naturally, but then they will put in a lot of time on your customers, successfully more or less, depending upon what the customer thinks of you.

There are some very simple explanations for customers changing suppliers, such as offering free burner service, a dramatized combustion testing story, possibly a cheaper price, but these are not the real reasons why customers change.

Far more often, and basically at all times, it is because the customer has been made to feel that your company has little if any direct personal interest in his welfare . . . that you just want to sell him some oil for his burner. With the customer in that state of mind, the competitor's salesman, with good personality and a convincing talker or he wouldn't be a salesman, often finds easy picking.

For all practical considerations, oil prices between companies are the same, quality variations are minor and delivery practices not greatly different.

A little investigation will show that the companies with the lowest turnover rates are those that go out of their way to personalize their customer relations. Not many companies do this, other than teaching the truck driver to be friendly. Few,

Oil Customers

a very few, hunt for excuses to write personalized letters to their customers. Some Eastern companies have been reported in past issues as engaging in this activity, notably Sherwood Brothers, who go so far as to use personal stationery.

Frank Spencer, fueloil manager for Socony-Vacuum at Chicago and former chairman of the Distribution Division of OHI, has been active in postcard mailing to customers, sending one on every excuse to say something. During rationing the messages were not hard to compose; since

Frank E. Spencer

the war ended only three have gone out, but he intends to get back to sending one a month. In each of the three postwar cards he has had a specific message, two of them price changes, and the third telling non-automatic customers what to do if the phone strike materialized.

Notice in the examples shown that reasons are given for the price changes, or on any of the other subjects, which very much eases the impact of a price rise.

Not many fueloil distributors will ever bother to personalize relations with their customers, for it is work to think up the things to say, and also costs a few dollars.

But to those companies that will take the trouble, customers will be definitely more secure, turnover will be lower because the personality of the competitive salesman will seem superficial beside the personality you have been building in the customer's mind.

59 EAST VAN BUREN STREET
CHICAGO 5, ILLINOIS

PRICE REDUCTION AND END OF FUEL OIL RATIONING

DEAR CUSTOMER: August 20, 1945

This will confirm to you the fact that effective August 15th, fuel oil rationing was *completely discontinued.* Effective today, we are reducing our prices on Tank Wagon Fuel Oil deliveries to the extent of 3/10 of 1c per gallon.

These developments will enable us to supply all of our customers *all of the fuel oil* they need during the coming winter, as it is needed, and without the annoyance that has existed for the last three years incident to the handling of fuel oil coupons.

We continue to recommend our "Weather Watching Service" and also urge that our customers let us fill their storage tanks either immediately or at our convenience before the coming of cold weather. We may have bad transportation and weather conditions this winter, and if so, despite the removal of fuel oil rationing, it will be very much to the advantage of our customers to have as much fuel oil in their storage tanks as possible before transportation or weather conditions become bad.

We appreciate greatly the co-operation given us by our customers during the last three difficult years of fuel oil rationing. *No longer* will it be necessary to heat only a portion of your home or to use the comfort of "Oil Heat" sparingly. Now, if the mornings or evenings are chilly, or even the days cold, *you may feel perfectly free to turn up your thermostat!*

Mobil Heat

SOCONY-VACUUM OIL COMPANY, INC.
FRANK E. SPENCER, *Manager*, Fuel Oil Department

59 EAST VAN BUREN STREET • CHICAGO 5, ILLINOIS

FUEL OIL PRICE CHANGE

DEAR CUSTOMER: November 2, 1945

Effective November 7, 1945, prices on Mobilheat Light Range, Mobilheat No. 1, Mobilheat (3) and Mobilheat No. 5, in all brackets will be advanced .3c per gallon.

This restores prices on these grades of Mobilheat to the basis that existed from December 30, 1942, to August 20, 1945.

Mobilheat prices were voluntarily reduced on August 20, 1945, to eliminate the .3c as authorized to cover additional costs due to rationing.

It is with full approval of the O.P.A. that those prices now be restored to offset, to a degree, increases in delivery and operating costs developed in the last several years.

We are pleased that our customers have benefited by the lower prices in effect since rationing ended. This .3c increase amounts only to between 4% and 5% of the cost of tank wagon fuel oil, depending on the grades and quantities delivered.

Under the existing conditions, we are confident that you fully understand the reason and justification for this nominal increase in price at this time.

Mobil Heat

SOCONY-VACUUM OIL COMPANY, INC.
FRANK E. SPENCER, *Manager*
Fuel Oil Department

59 EAST VAN BUREN STREET, CHICAGO 5, ILLINOIS

IMPORTANT NOTICE—CAUTION

January 11, 1946.

DEAR CUSTOMER:

Just in case the threatened Telephone Strike does materialize, we do not want any of our Mobilheat fuel oil customers to be further inconvenienced by running out of oil because they cannot call us.

WEATHER WATCHING Customers: You need have no particular concern, because deliveries will be made to you automatically when needed.

WILL CALL Customers: We suggest you carefully watch your storage to arrange for *mailing your orders* to us in time to provide sufficient advance notice for delivery. This is *especially* true where manually controlled *Space* heaters and, the *processing* use of fuel oil makes it impossible for us to judge your requirements as being strictly controlled by weather changes.

To those whose use is thermostatically controlled and have not requested Weather Watching, we have a general idea as to when you are due for oil, and although we cannot guarantee it, we will *endeavor* to advise you by *postal card* when our records indicate your storage is down to a level where you should order. Please heed such notices and *immediately* return to us the detachable order card such a notice provides.

As an item of general information, this heating season to January 1 has been 7.6% colder than last season and 15.3% colder than average.

Mobil Heat

SOCONY-VACUUM OIL COMPANY INCORPORATED
FRANK E. SPENCER, *Manager*
Fuel Oil Department

Single Home Heat and Power Source Seen in Experiments

JUDGING FROM RESULTS reported by Orion O. Oaks, chief engineer of the John B. Pierce Foundation, Raritan, N. J., to the 52nd Annual Meeting of the American Society of Heating and Ventilating Engineers at New York, January 27 to 30, it may be entirely practicable for an owner to have in his home one fuel-burning device which will furnish the energy for house heating, hot water, refrigeration, cooking, baking, ironing, and generating electricity for lighting and other purposes. Under present day arrangements, a typical house usually has separate apparatus for each of the foregoing functions.

To the engineer, the use of separate forms of energy for several of these functions seems somewhat inconsistent and consideration has been given to the use of one energy source. The author describes a method of accomplishing this by employing one fuel-using device which can use coal, gas or oil, and from which a hot liquid is circulated to various other apparatus to provide energy for the various functions.

The liquid used is described by the author as tetracresylicate, with a boiling point of over 800° and a solidifying point at 65° below zero. The experimental installation developed by Mr. Oaks include a boiler, a unit heater, hot water heater, steam generator, refrigerator, and cooking unit.

Fuel is burned in the boiler or primary generator, which is of the liquid tube, liquid wall type, with a built-in economizer and a built-in air preheater. In this unit, reported to operate at an overall efficiency of over 80%, the liquid is heated. The liquid is then circulated through highly insulated piping to other units, including the house heating unit which is a liquid tube air heating type with all of the customary features, and where the heat is transferred to water which is circulated in to radiators, convectors, or radiant panels, as desired. A second heat exchanger is the hot water supply unit with submerged hot liquid coils.

The refrigerating unit is of the standard absorption type as distinguished from a mechanical compressor type (the well-known gas refrigerator is an absorption type device), the source of energy for the absorption refrigeration process being the heating liquid from the primary generator.

The cooking unit consists of metal pots of various sizes which are depressed in the insulated working table. Fitted to these metal pots are cooking utensils or liners which are provided with insulated metal covers. Set flush with the work table are a service hot plate and a flat surface griddle to be used for all surface cooking and frying. The baking unit, which may be located separately or built into the work table, consists of a compartment, or compartments, conforming to standard oven dimensions and is provided with raise-up or open-out flush mounted doors as desired. In other words, the food is cooked by use of radiant heat and the author reports that the time for cooking by this method is approximately half that necessary for conventional methods.

Hot liquid circulates through the system at atmospheric pressure; therefore, an expansion tank is used to absorb the increasing volume of the liquid as the temperature increases. This vessel is cylindrical in form and is provided with an inlet connection from the high point of the system and an overflow pipe which discharges to the atmosphere through a low pressure relief valve. A motor driven centrifugal pump is used to circulate the liquid throughout the various units and return it to the generator for re-heating and recirculation.

When required, electric energy is produced by means of a heat exchanger or boiler producing superheated steam at pressures varying from atmospheric to 750 pounds per square inch. This steam is utilized in driving a steam turbine connected to a generator to produce electric current of whatever characteristics may be required.

The underlying reason for possible savings when using the liquid heat consolidated unit is the fact that all energy conversions are said to be 100 per cent efficient, excepting in the primary generator. By concentrating on the efficiency of this primary generator and reducing the loss through radiation by utilizing improved types of insulating materials, transmission losses are reduced to a minimum, and the over-all efficiency of the entire equipment is raised to a material extent.

The apparatus is not yet ready for the market, the purpose of the investigation reported being to demonstrate the practicability of the concept.

◈

National Modern Homes Exp. To Be at New York in May

A NATIONAL MODERN Homes Exposition, first since the war, will be held at New York's Grand Central Palace in May, it was announced January 28 by Matthew G. Ely, chairman of the metropolitan Association of Real Estate Boards.

Mr. Ely said that the real estate boards of the Metropolitan Area will be included among the sponsors of the 1946 show.

Citing the acute shortage of homes and apartments in the New York area and plans now being started to alleviate the situation, Mr. Ely pointed out that the Real Estate Boards are naturally interested in having brought to the attention of the public the manifold new developments in housing during the past few years with which the public is still not conversant.

"The Real Estate Boards in the Metropolitan Area have been glad to join with the other organizations which will participate in the sponsorship of the National Modern Homes Exposition, which they believe will be a service to the public in advancing the newest ideas and of assistance to overcome the acute dwelling shortage. We do so because we believe that the National Modern Homes Exposition will do a great deal toward public education in the field of home building, renovating, financing, locating and servicing."

The dates for the Exposition have been announced as May 4 through May 11. It will be held at Grand Central Palace under the management of the Campbell-Fairbanks Expositions, Inc., and the United Expositions Corporation.

The 1946 Homes Exposition will be the first national show of its type since before the war.

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SIGN OF GOOD BURNER!"

Webster Electric Transformers

Webster Electric Ignition Transformers have always been recognized for their high quality construction and long-life dependability. Below we list a few of the features which have made these products worthy team-mates for Webster Electric Fuel Units as "The Sign of a Good Oil Burner."

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2. Smaller sizes for draft tube adaptation.
3. Extra sized junction boxes for easy connections.
4. Convenient location of terminals for every type of connection.
5. Separate mounting plates for exact replacement.
6. Listed by Underwriters' Laboratory.

Webster Electric Ignition Transformers will fit almost all oil burner installations.

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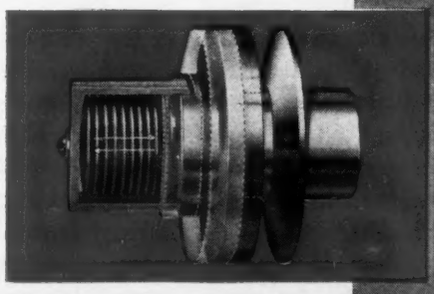
A New Webster Electric Product For Better Control of Warm Air Distribution

THERMODRIVE will provide a new conception in the distribution of warm air by forced warm air furnaces. It will produce results heretofore unattainable. Watch for details.



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"Where Quality is a Responsibility and Fair Dealing an Obligation"

Servicing One-Pipe Steam Plants

Attention Must Be Given gph Rate, Boiler Water, and Vent Valves

By
J. W. Schulz

STEAM SYSTEMS equipped with radiator vent valves are well liked by many enthusiasts for boiler heating. At rock bottom first cost for the equipment, these men say, such systems give all the benefits of radiator heat and summer-winter hot water.

Though simple and rugged, these steam plants need certain expert attention to make them work properly and to keep them in good condition. Early in the history of oilheating it was learned that a burner owner invariably blames the burner for cold rooms, inability to heat the house on coldest mornings, bumpy heating, knocking steam mains, and other heating plant trouble. When an oilfired steam plant needs adjustment or repair, the oilburner man is called. Either he gives the steam plant proper attention or it does not get it.

Simply removing a faulty radiator vent valve and screwing in a new one can turn a stone cold radiator into the hottest radiator in the house. Ten minutes' work adjusting half a dozen vent valves can make the favorite rooms warmer and the other rooms cooler, and save 20% of the oil used previously. Replacing steam main quick vents calls for one wrench and a few minutes' work. Correcting boiler water trouble usually is simple work, and so is giving proper attention to low water cut-outs and boiler feeders. The following case histories about usual and unusual service problems in one-pipe steam plants bring out these points.

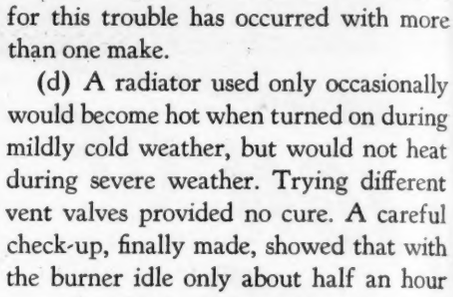
(a) Asked by the fueloil company to find the reasons for high oil bill complaints, a service man spent half a day at the house, tuned the burner, and indicated his assignment had been completed, but the complaints continued. After the burner had been re-checked for draft, CO_2 and stack temperature, the oil man insisted on taking the service man through the rooms of the house, which he had not seen before. Finding a big radiator in the living room cold when several other radiators were hot, the fueloil man took out its radiator vent valve. There was a big "whoosh" of escaping air and the radiator filled with steam. Attempts to blow through the vent valve proved it tight plugged. Replacing eight dilapidated radiator vent valves gave the owner better heat on two-thirds the oil he had been using.

Clean Water Essential

(b) The radiators heated slowly though 2.0 gph was being fired for about 400 sq. ft. of standing radiation, so a burner dealer asked the owner if the boiler water was clean. The owner nodded at the gauge glass, full of crystal clear water, and said that as the water stayed clear he had not even fixed the boiler drain cock, broken years ago. The dealer opened the drain cock with a Stillson wrench. Mud thicker than grease oozed out. Eight pails of muck were coaxed from the boiler, a new drain cock was installed, and proper chemicals and clear water were used for thorough flushing. The radiators then heated as they should. The dealer explained that a gauge glass often fills up with clear distilled water even with mud in the boiler, since steam condenses in the upper part of the gauge glass and forms clear water which fills the lower part of the glass. "Bounce" of the water in a gauge glass tells nothing. Many boilers, especially when hard-fired, show a bouncing water line with the boiler water in excellent condition, whereas other boilers show no water line bounce when loaded with dirty water.

(c) This new apartment house was heated by a well-designed steam plant equipped with excellent vent valves, yet the janitor complained that the radiators went on strike. He had to remove the vent valves, shake water out of them and blow through them. Check-up proved that many vent valves were screwed only a turn or two into the radiators, and that this waterlogged the modern vent valves (see Diag. 1). A tap was used to enlarge radiator tappings where vent valves could not be screwed in far enough without risk of damaging them or making them difficult to remove later. The diagram does not show a particular make of vent valve, for this trouble has occurred with more than one make.

(d) A radiator used only occasionally would become hot when turned on during mildly cold weather, but would not heat during severe weather. Trying different vent valves provided no cure. A careful check-up, finally made, showed that with the burner idle only about half an hour on very cold days, the radiators already turned on tended to "hog" the steam. Condensing of steam in them after the burner stopped created a slight vacuum in them. During its normal "on" period, the burner failed to raise the boiler pressure appreciably above atmospheric pressure, thus there was no pressure to drive the air from a cold radiator which was just turned on. To end the complaint, the gph rate of the burner was increased enough to give the desired results.



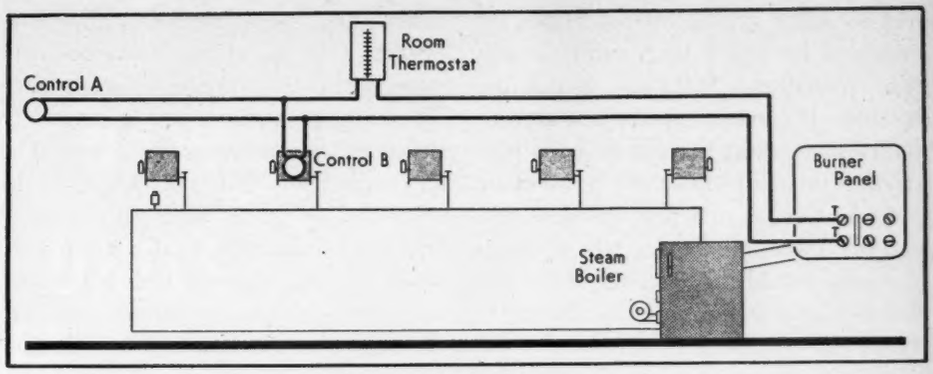
Diag.1

(e) No changes had been made to this heating plant, but the "false water line" (ie, the level of water in the vertical pipe which connects the end of the steam main with the wet return line) apparently became higher and higher until the far end of the steam main was flooded with water. When the plant was new, removing the quick vent at the end of the steam main had permitted live steam to escape. After the trouble developed, water poured out when the quick vent was removed. Check-ups showed nothing wrong with the steam main and no increase in load or firing rate, therefore the contractor concluded

that the return line was no longer taking water back to the boiler fast enough. However, the major job of uncovering and inspecting the entire wet return line proved it in A-1 condition. The trouble continued. Finally a laboratory check-up was made on the boiler water. The diagnosis which led to easy ending of the trouble was this: Oil and other foreign substances in the boiler water caused a great deal of water to "carry over" into the steam main; at the boiler, water splashed up into the steam main along with the steam. As the boiler header was not dripped at the boiler, once in the steam main this water travelled the length of the main, then dropped to the wet return and travelled through it back to the boiler. This overloaded the wet return line, giving it possibly five or ten times the amount of water it was designed to handle. Water slugs struck and damaged the quick vent at the end of the steam main, and the end radiators and end of the steam main flooded at times. Cleaning the boiler properly and winding up with boiler water which steamed freely ended the trouble.

Control Trick

(f) The dealer who had installed the burner in this 18-room pretentious home understood modern heating problems thoroughly and knew that the complaints about bumpy heating were caused by the excessive steam radiation. He was in no position to find fault with the heating plant, however, as it had been installed only a few years earlier and had been laid out by the friendly representative of a large equipment manufacturer. Then the trouble increased because rock wool insulation was installed over the top floor ceilings and in all the outside walls. Much oil was saved by the reduction in heat loss, but the oilburner "off" periods of course became considerably longer. I developed the control layout shown in Diag. 2 for this installation, and since have used it to end other complaints involving bumpy heating caused by excessive steam radiation. Consider the contacts of Control A open, for this is an outside thermostat, "on" only when the outside temperature is below about 25°. With Control A normally "off," then, Control B is in series with the regular room thermostat. Simply a surface-mounted temperature control, usually set between 100° and



Diag. 2

140° as needed to secure oilburner "on-off" recorder charts which please us, Control B stops the burner when the radiators are about one-third full of steam. To get more or less heat with Control B holding back the oilburner, the control setting is adjusted or the position of the control on the radiator is altered. The object is to get the kind of heat which would be obtained with the radiators about half the size they are, and to eliminate long oilburner "off" periods which cause the radiators to become cold and stay cold for two or three hours on typical winter days. When the outside temperature drops low enough, say to about 25°, Control A snaps "on", shunting Control B and eliminating the hold-back feature. Far from expensive and elaborate, this control rig is made up of equipment most control experts have on hand and can easily alter to adapt to the purpose. On experimental projects it has ended bumpy heat complaints when applied with patience and help from "on-off" and room temperature recorders. Such a simple control layout as this is, of course, far from able to obtain results comparable to those given by the new highly developed control systems made for better homes and larger buildings.

(g) On this installation where the water line of the boiler rose a few inches every day and made it necessary to drain water ever so often, the dealer first blamed the water feeder of ancient design. Unable at first to sell the owner the new water feeder he should have had, the dealer had his service man try to grind in the valve of the old feeder. The water line of the boiler continued to rise every day, and again the valve of the feeder received attention. Even this did not cure the trouble. Then the service man had an inspiration. Instead of following the dealer's orders and trying once more to fix the water feeder, he closed the valve in the water input line to the feeder. The water line of the boiler still went up. The trouble? A porous coil in the indirect water heater. The service man proved this by taking the pressure off the hot water storage tank and water heater for a two-day test.

(h) Although he had bought a set of vacuum valves elsewhere at a high price, this home owner complained to his regular serviceman, the heating plant behaved no better than with its old valves. The serviceman explained that three steps will alter an ordinary one-pipe steam plant so that it develops a satisfactory vacuum. First, replace every radiator vent valve and steam main quick vent with a vacuum type valve. But the best. Second, use positive methods to locate and seal every air leak in the system. One remaining leak can prevent good vacuum operation. As one method, turn off half the radiators and put ten pounds steam pressure on the rest, then look for steam and water leaks. Later, turn off the radiators which have been tested and test the others under the same steam pressure. Third, install a good combination gauge for boiler pressure and vacuum, and learn by watching it if the system develops a satisfactory vacuum after the burner stops. Check the maximum vacuum at the start of each heating season and several times during each season.

After improvements had been made by the serviceman, this particular system developed a maximum vacuum of 22" after the burner stopped. The man declares he will install a suitable vacuum breaker, to limit the maximum vacuum or break it when the burner starts, if the system shows a need for this. So far it hasn't.

Of course, experts argue about the ex-

tent to which typical oilfired plants are improved by fitting them with vacuum type specialties. Still, this is not debatable: If vacuum specialties are installed in an effort to improve a one-pipe steam plant, the plant should be rid of air leaks if necessary to permit it to develop a vacuum, and a gauge which reads vacuums should be used to find out whether or not the effort to develop a vacuum has been successful.

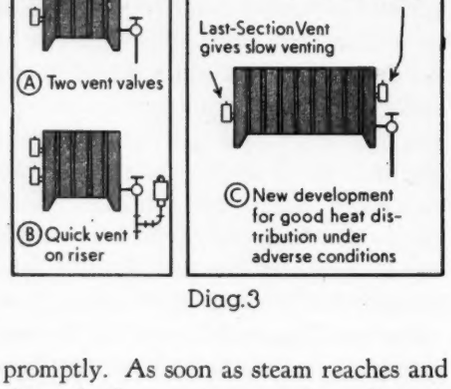
(i) Water in the steam mains crippled this installation. It was put there not by dirty, oily boiler water, but simply by having the boiler water line too high. Because the low water cut-out had been installed too high, the owner kept the water glass three-quarters full. That was with the burner idle and the boiler not steaming. When the round cast-iron boiler started to steam, the water line rose two or three inches as it often does in such boilers. Wet steam and water in the mains was the result. Good heating plant operation was obtained after the low water cut-out had been lowered to stop the burner when the water line was about to disappear from the gauge glass.

(j) Here's a new development for systems with too much radiation and too little boiler capacity, which you would like to fire lightly without the penalty of poor distribution of steam to the radiators.

The house in which the problem arose had 622 sq. ft. of standing steam radiation, although it could have been well heated by less than 400 sq. ft. Firing the burner 1.5 gph caused it to run few hours on a January day (the burner used about 13 gallons of oil a day in January) but caused certain radiators to stay cold. The objective was to fire the boiler lightly for steady heat, low stack temperature, and fuel economy, yet to have the steam distribute properly to the different radiators.

Diag. 3 shows the development of the idea. "A" shows two vent valves on a large radiator or any radiator which proves especially slow to heat. "B" shows a steam main quick vent on the riser in addition, a feature highly effective for very large radiators some distance from the mains of commercial heating systems, but likely to be an eyesore in domestic systems. "A" and "B" were developed by the author and have been recommended for trouble jobs for several years.

"C" shows the new development for systems fired too lightly for steady burner operation to fill all the radiators with steam within 90-minutes of a warm start. The end of the radiator which connects to the steam line and heats first is vented by an exceptionally fast vent valve. At the other end of the radiator, at the usual vent valve location, is a valve which gives relatively slow venting. The last-section vent valve emits air at about one-quarter the rate of the first-section vent valve. Every radiator in the system is fitted with two vent valves according to this pattern. With the system starting to steam there is virtually a quick-vent at every radiator through which the air breathes out freely to permit steam to reach the radiator


Ⓐ Two vent valves
Ⓑ Quick vent on riser
First-Section Vent gives fast venting
Last-Section Vent gives slow venting
Ⓒ New development for good heat distribution under adverse conditions
Diag.3

promptly. As soon as steam reaches and closes the first-section vent, the radiator is vented only by the last-section vent, of relatively low air capacity. Where one radiator has tended to stay cold until after the others heated, this idea favors that radiator heavily by providing it with five times the normal venting rate which is provided for any radiator which receives steam first. The result is much like keeping the vent valve out of a slow-to-heat radiator until steam reaches the radiator, since whether you do this by hand or through use of first-section and last-section vent valves, the slow-to-heat radiator simply is vented at an extraordinarily fast rate until steam reaches it. The combination of this idea with the controls shown in Diag. 2 has permitted obtaining exceptionally good results in several homes which previously were not heated after a fashion complimentary to oil firing.

This set of general pointers for servicing one-pipe steam plants has been used to educate to steam heat men who previously knew much about oilburners and controls but little about heating:

1. Check the firing rates of steam plants carefully. Avoid needless overfiring, which wastes fuel. But make sure the flame is large enough so that a properly vented system heats every radiator properly before the burner stops after running its usual length of time.

2. Don't forget that a steam boiler must have clean water if it is to steam easily and freely. Water which has been in a boiler five years without draining and flushing, and which looks like tomato soup when you open the bottom drain cock, does not help the cause of low oil bills and satisfied users of oilheating equipment. To be able to handle everyday problems, a serviceman must learn the in's and out's of using proper chemical treatment for cleaning dirty boilers. As with everything else, there are the good and bad trademarked compounds for treating boiler water and cleaning boilers. The expert should know the "How" and the "Why" of the compounds he uses and recommends to boiler owners.

3. Working on one-pipe steam plants, you can't get results without having good vent valves and steam main quick vents on hand—any more than you can get results from pressure burners without having new nozzles on hand. Make careful decisions about the makes of venting specialties you will use as standard equipment. Aim to buy the best. Always keep a supply of radiator vent valves and steam main quick vents on hand in your tool kit or automobile. It's good, also, to keep with you at least one steam pressure gauge you know you can believe.

4. Make sure that none of your customers' steam boilers is ruined by low-water or no-water! Minimum protection lies in a low water cut-out. The modern practice is to install a combination feeder and low water cut-out, for only it can free the owner's mind of thinking about the boiler needing water, thus only it gives truly automatic operation of a steam boiler. Bear in mind that it is not becoming for owners of modern heating plants to have to go down the basement every so often and let some water into the boiler.

5. Give due attention to adjusting properly the controls of the steam plants you service. Test the pressure control of each plant regularly to make certain it

(Continued on page 111)

Why HEIL'S NEW '46 OIL-FIRED UNITS *Save You Money* on Service Calls

Nobody knows better than you how quickly extra service can eat up the profits in an automatic heating installation—how repeated call backs create a dissatisfied customer who can ruin your chances for other sales in the neighborhood.

That's why you owe it to yourself to look at Heil before you stake your profits in '46 on any other line. You need never worry about a Heil unit letting you down on the promises you make for it—need never be afraid of getting untried designs rushed into production to meet a seller's market—and when you look inside the jackets of this new Heil line you'll find the reasons why.

HEIL'S SOUND ENGINEERING MEANS DEPENDABILITY

Examine every detail and you'll see the painstaking efforts of Heil designers to make every model as free from service as engineering skill can devise. Check every point where other units have failed in the past and you'll find that Heil provides the greater strength and sounder design which your own experience will assure you means long, trouble-free operation. Compare materials and construction, in part after part, and you'll know the reasons for Heil's reputation of uncompromising quality . . . the reasons for Heil's notable record of uninterrupted service during the trying war years. Now, improved postwar designs offer even greater dependability and freedom from service.

Notice, too, the more accessible arrangement of all parts requiring maintenance or adjustment—how fans, belts, pulleys, filters, flues, controls and burners are easier to get at—and you'll realize why Heil's advanced engineering also saves you time and money on those infrequent occasions when these units may require attention. Heil's greater accessibility and identical construction features throughout the line also save you money by lightening your service training problems.

CHOOSE HEIL—THE FRANCHISE WITH A FUTURE

Make no mistake about it—the day is here when you need not only equipment that's designed to sell and stay sold, but a franchise that's written with *your profits* in mind as well. You'll find Heil far and away the friendliest and most cooperative supplier you've ever dealt with—you'll find your quotas based on realities and your selling aids designed the way you like to have them to meet the peculiar problems of your territory. Mail the coupon today for Heil's new booklet that answers the dealer's questions about the complete new line that will put you out in front in '46.

MANY VALUABLE TERRITORIES STILL OPEN

The Heil Co., Dept. F-2
Milwaukee 1, Wisconsin

Send me your dealer pre-view book showing full-color reproductions of the new Heil models and complete details about the Heil franchise, Merchandising Assistance and openings in my territory.

Name.....

Company.....

Address.....

City.....Zone...State.....

THE HEIL CO.

GENERAL OFFICES • MILWAUKEE 1, WISCONSIN

Manufacturers of Quality Automatic Heating Equipment Since 1924

COMPARATIVE COSTS OF HEATING WITH

A GAS	B OIL		C BITUMINOUS COAL (Hand-fired without controls) (See note below[2])								
100,000 B.t.u. per therm	140,000 B.t.u. per gallon		Heating Value in B.t.u. per pound								
	Heating Unit DESIGNED FOR Oil Burning	Heating Unit CONVERTED TO Oil Burning	Low			Medium			High		
COST (cents per therm) (See note below[1])	COST (cents per gallon)		10,000	10,500	11,000	11,500	12,000	12,500	13,000	13,500	14,000
			COST (dollars per ton)								
3.0	4.2	3.7	4.10	4.35	4.55	4.75	4.95	5.15	5.35	5.55	5.75
3.2	4.5	3.9	4.40	4.60	4.85	5.05	5.30	5.50	5.70	5.95	6.15
3.4	4.7	4.2	4.65	4.90	5.15	5.35	5.60	5.85	6.10	6.30	6.55
3.6	5.0	4.4	4.95	5.20	5.45	5.70	5.95	6.20	6.45	6.70	6.95
3.8	5.3	4.7	5.20	5.50	5.75	6.00	6.25	6.55	6.80	7.05	7.30
4.0	5.6	4.9	5.50	5.80	6.05	6.30	6.60	6.90	7.15	7.45	7.70
4.2	5.9	5.1	5.75	6.05	6.35	6.65	6.95	7.20	7.50	7.80	8.10
4.4	6.1	5.4	6.05	6.35	6.65	6.95	7.25	7.55	7.85	8.15	8.45
4.6	6.4	5.6	6.30	6.65	6.95	7.25	7.60	7.90	8.20	8.55	8.85
4.8	6.7	5.9	6.60	6.95	7.25	7.60	7.90	8.25	8.60	8.90	9.25
5.0	7.0	6.1	6.90	7.20	7.55	7.90	8.25	8.60	8.95	9.30	9.60
5.2	7.3	6.4	7.15	7.50	7.85	8.20	8.60	8.95	9.30	9.65	10.00
5.4	7.5	6.6	7.45	7.80	8.15	8.55	8.90	9.30	9.65	10.00	10.40
5.6	7.8	6.9	7.70	8.10	8.45	8.85	9.25	9.60	10.00	10.40	10.80
5.8	8.1	7.1	8.00	8.40	8.75	9.15	9.55	9.95	10.35	10.75	11.15
6.0	8.4	7.3	8.25	8.65	9.05	9.50	9.90	10.30	10.75	11.15	11.55
6.2	8.7	7.6	8.55	8.95	9.40	9.80	10.25	10.65	11.10	11.50	11.95
6.4	8.9	7.8	8.80	9.25	9.70	10.10	10.55	11.00	11.45	11.90	12.30
6.6	9.2	8.1	9.10	9.55	10.00	10.45	10.90	11.35	11.80	12.25	12.70
6.8	9.5	8.3	9.35	9.80	10.30	10.75	11.20	11.70	12.15	12.60	13.10
7.0	9.8	8.6	9.65	10.10	10.60	11.05	11.55	12.05	12.50	13.00	13.45
7.2	10.1	8.8	9.90	10.40	10.90	11.40	11.90	12.35	12.90	13.35	13.85
7.4	10.3	9.1	10.15	10.70	11.20	11.70	12.20	12.70	13.25	13.75	14.25
7.6	10.6	9.3	10.45	10.95	11.50	12.00	12.55	13.05	13.60	14.10	14.65
7.8	10.9	9.6	10.70	11.25	11.80	12.35	12.85	13.40	13.95	14.45	15.00
8.0	11.2	9.8	11.00	11.55	12.10	12.65	13.20	13.75	14.30	14.85	15.40
8.2	11.5	10.0	11.30	11.85	12.40	12.95	13.55	14.10	14.65	15.20	15.80

[1] NOTE: To find your local Gas cost in cents per therm, divide local market price in cents per 1000 cubic feet (your local gas company can give you the figure that applies in your case) by the number of therms in 1000 cubic feet (see below).

TYPE OF GAS	Manufactured			Mixed		Natural	
Average B.t.u. per cu. ft.	500	600	700	800	900	1000	1100
Number of therms in 1000 cu. ft.	5.0	6.0	7.0	8.0	9.0	10.0	11.0

[2] NOTE: Heating value in B.t.u. per pound for a given Coal or Coke may be obtained from your fuel dealer. All heating values of Coal are based on commercial conditions with normal moisture.

* NOTE: Comparisons in the Table are based on the assumption that the fuels are burned in the same building and in the same heating system; reasonably well operated and properly adapted to the fuel in use. The costs shown for each type of fuel are based upon average values of the "over-all house efficiency," as determined at the University of Illinois from extensive tests conducted in two research homes where the heaters were located in the basement. "Over-all house efficiency" represents that portion of heat in the fuel which is actually used for heating the *entire house.* Such an efficiency may be affected by differences in house construction, living habits, heating plant design, by installation and by operating controls.

These Comparative Fuel Cost Tables are Published Through Cou

VARIOUS FUELS IN THE SAME BUILDING*

D

BITUMINOUS COAL (Hand-fired with controls)
BITUMINOUS COAL (Stoker-fired)
ANTHRACITE (Hand-fired without controls)
COKE (Hand-fired without controls)

Heating Value in B.t.u. per pound								
Low			Medium			High		
10,000	10,500	11,000	11,500	12,000	12,500	13,000	13,500	14,000
COST (dollars per ton)								
4.85	5.10	5.35	5.60	5.85	6.10	6.35	6.60	6.80
5.20	5.45	5.70	6.00	6.25	6.50	6.75	7.00	7.30
5.50	5.80	6.10	6.35	6.65	6.90	7 20	7.45	7.75
5.85	6.15	6.45	6.75	7.05	7.30	7 60	7.90	8.20
6.15	6.50	6.80	7.10	7.40	7.70	8.05	8.35	8.65
6.50	6.85	7.15	7.50	7.80	8.10	8.45	8.80	9.10
6.85	7.15	7.50	7.85	8.20	8.55	8.90	9.20	9.55
7.15	7.50	7.85	8.25	8.60	8.95	9.30	9.65	10.00
7.50	7.85	8.20	8.60	8.95	9.35	9.70	10.10	10.45
7.80	8.20	8.60	9.00	9.35	9.75	10.15	10.55	10.90
8.10	8.55	8.95	9.35	9.75	10.15	10.55	10.95	11.35
8.45	8.90	9.30	9.75	10.15	10.55	11.00	11.40	11.80
8.80	9.20	9.65	10.10	10.55	10.95	11.40	11.85	12.30
9.10	9.55	10.00	10.45	10.90	11.35	11.85	12.30	12.75
9.45	9.90	10.35	10.85	11.30	11.75	12.25	12.75	13.20
9.75	10.25	10.75	11.20	11.70	12.20	12.70	13.15	13.65
10.10	10.60	11.10	11.60	12.10	12.60	13.10	13.60	14.10
10.40	10.90	11.45	11.95	12.50	13.00	13.50	14.05	14.55
10.70	11.25	11.80	12.35	12.85	13.40	13.95	14.50	15.00
11.05	11.60	12.15	12.70	13.25	13.80	14.35	14.90	15.45
11.40	11.95	12.50	13.10	13.65	14.20	14.80	15.35	15.90
11.70	12.30	12.85	13.45	14.05	14.60	15.20	15.80	16.40
12.05	12.60	13.25	13.85	14.45	15.00	15.65	16.25	16.85
12.35	12.95	13.60	14.20	14.80	15.45	16.05	16.70	17.30
12.70	13.30	13.95	14.60	15.20	15.85	16.50	17.10	17.75
13.00	13.65	14.30	14.95	15.60	16.25	16.90	17.55	18.20
13.35	14.00	14.65	15.35	16.00	16.65	17.35	18.00	18.65

E

ANTHRACITE (Hand-fired with controls)
ANTHRACITE (Stoker-fired)
COKE (Hand-fired with controls)

Heating Value in B.t.u. per pound				
Medium		High		
12,000	12,500	13,000	13,500	14,000
COST (dollars per ton)				
7.20	7.50	7.80	8.10	8.40
7.70	8.00	8.30	8.65	8.95
8.15	8.50	8.85	9.20	9.55
8.65	9.00	9.35	9.70	10.10
9.15	9.50	9.90	10.25	10.65
9.60	10.00	10.40	10.80	11.20
10.10	10.50	10.90	11.35	11.75
10.55	11.00	11.45	11.90	12.35
11.05	11.50	11.95	12.40	12.90
11.55	12.00	12.50	12.95	13.45
12.00	12.50	13.00	13.50	14.00
12.50	13.00	13.50	14.05	14.55
12.95	13.50	14.05	14.60	15.15
13.45	14.00	14.55	15.10	15.70
13.95	14.50	15.10	15.65	16.25
14.40	15.00	15.60	16.20	16.80
14.90	15.50	16.10	16.75	17.35
15.35	16.00	16.65	17.30	17.95
15.85	16.50	17.15	17.80	18.50
16.35	17.00	17.70	18.35	19.05
16.80	17.50	18.20	18.90	19.60
17.30	18.00	18.70	19.45	20.15
17.75	18.50	19.25	20.00	20.75
18.25	19.00	19.75	20.50	21.30
18.75	19.50	20.30	21.05	21.85
19.20	20.00	20.80	21.60	22.40
19.70	20.50	21.30	22.15	22.95

INSTRUCTIONS FOR USE OF CHART

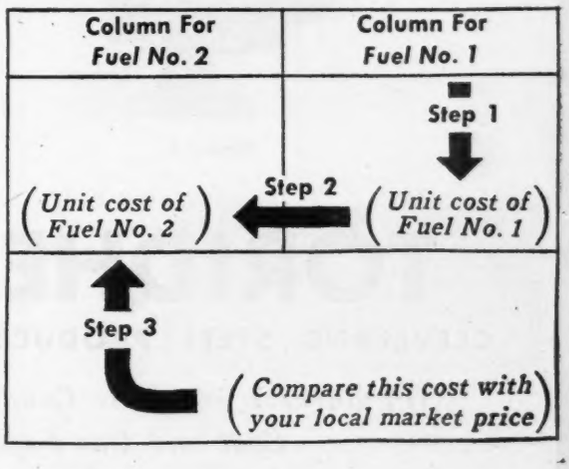
To compare the cost of fuel selected as a base (Fuel No. 1) with another fuel (Fuel No. 2):

Step 1. Locate in the proper vertical column the unit cost prevailing in your locality for Fuel No. 1. (For Gas see Section A; for Oil see Section B; for Solid Fuels see Sections C, D, and E. Note that several firing methods and several heating values are shown for Solid Fuels.)

Step 2. Read across the Table in the same horizontal line to locate in the proper column the comparative unit cost of Fuel No. 2.

Step 3a. If the market price prevailing in your locality for Fuel No. 2 is greater than the cost indicated in Step 2, a change to this fuel will increase your total fuel bill.

Step 3b. If the market price prevailing in your locality for Fuel No. 2 is less than the cost found in Step 2, a change will lower your fuel bill.


Column For Fuel No. 2
Column For Fuel No. 1
Step 1
Step 2
(Unit cost of Fuel No. 2)
(Unit cost of Fuel No. 1)
Step 3
(Compare this cost with your local market price)

Courtesy of the Small Homes Council, University of Illinois

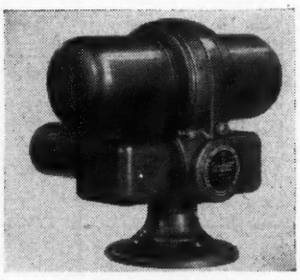
You Can Count on Cooperation

The demand for Toridheet burners and equipment including our "package" units is greater than at any time in the history of this Company. We do not say this boastfully but with a deep sense of the obligations it creates.

Frankly, our plans for reconversion were well developed, and if all the conditions related to conversion were as favorable as the sales outlook, we would be much happier—and so would all those who are depending upon us!

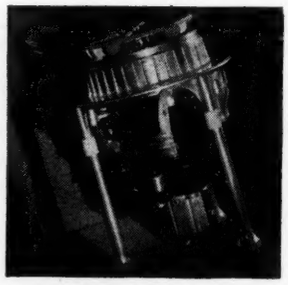
Never has the recognition of what has been accomplished in perfecting Toridheet Oil Burners, with their distinctive advantages, been higher. Reputation built on performance has spread widely, the obvious result being that demand has exceeded all expectations.

You can count on the fact that we are treating all our customers with the same absolute fairness that has characterized our long history. When we get a "break" you will get a break. Meantime, we ask your indulgence. Thanks for your friendly patience.



Model S

MEMBER OBI OIL BURNER INSTITUTE



Rotary Burner

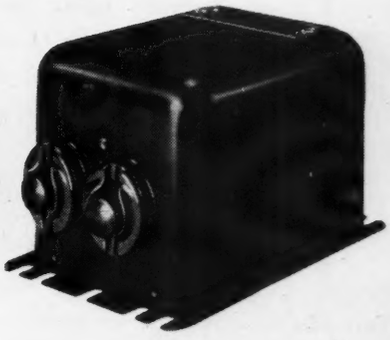
TORIDHEET DIVISION

CLEVELAND STEEL PRODUCTS CORP. • CLEVELAND 2, OHIO

Oil Burners • Air Conditioning Units • Oil-Burner Boilers
Coal and Gas Furnaces • Oil Water Heaters

They've Always Enjoyed The Radio...

Thanks to JEFFERSON'S RADIO INTERFERENCE BARRIER



Another Jefferson "First"

The development of radio and oil burners occurred about the same time. In both industries, Jefferson Electric Transformers have played an important part.

For oil burner application, Jefferson engineers realized that in the design of the Ignition Transformers, provision against radio interference was a highly desirable feature.

As a result the radio interference barrier grounded to the transformer case was incorporated in the transformer as covered by U. S. Patent No. 2,183,355 and Canadian Patent No. 386,609. This method which suppresses interference, plus the mid-point grounded design, have had much to do with the long years of excellent performance on the country's leading makes of oil burners. JEFFERSON ELECTRIC COMPANY, Bellwood (Chicago Suburb), Illinois. *In Canada:* Canadian Jefferson Electric Co., Ltd., 384 Pape Avenue, Toronto, Ont.

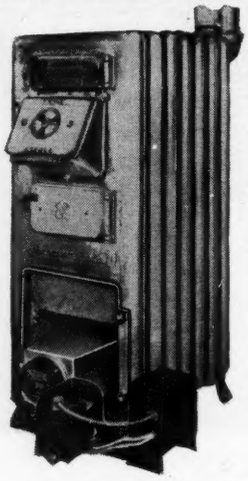
JEFFERSON ELECTRIC

IGNITION TRANSFORMERS

fueloil & oil heat

HERE'S THE 6TH REASON WHY....YOU CAN MAKE MORE MONEY AS AN H.C.LITTLE DEALER

THE QUIET OPERATION OF AN *H. C. Little* OIL BURNER IS IDEAL FOR DOMESTIC INSTALLATIONS



For example, in an Arcola installation, which must be absolutely silent, the quiet operation of the H. C. Little oil burner makes it the perfect burner for the job.

In the operation of the H. C. Little vaporizing oil burner there is no hum–no vibration–none of the objectionable roar or pulsation often found in mechanical burner installations.

Quiet burner operation is an important sales point, which H. C. Little dealers use to good advantage. Quiet operation makes the H. C. Little oil burner ideally suited to domestic installations, especially in smaller homes.

The unusually quiet operation of the H. C. Little oil burner cannot be illustrated with charts or proved in a photograph. However, it can be *demonstrated.* If you are interested, write for the name of your nearest H. C. Little distributor, who will be glad to show you an H. C. Little burner in actual operation. We think such a demonstration will give you a better idea of why you can make more money as an H. C. Little dealer.

(This is Advertisement #6 in a Series of Eight)

THESE ARE THE OTHER SEVEN REASONS

- Exclusive Burner Design
- Exclusive CI Electric Ignition
- 40% Quicker Burner Installation
- Absence of Service
- Complete Range of Burner Sizes
- Complete Line of Factory Assembled Units
- Designed for the BIG Market of Small Homes

WRITE FOR A COPY OF "How to Get Real Profits in Postwar Heating" and learn ALL the reasons why you can make more money as an H. C. Little Dealer.

Dept. 2
San Rafael, Calif.
Factory Representatives in Principal Cities

H. C. LITTLE OIL BURNER

H. C. Little BURNER CO.

The Greatest Name in Low-Cost Automatic Oil Heat for Small Homes

National Burner Show and Convention Being Shaped

A CONVENTION PROGRAM which will provide a week of activity for the period of the National Oil Heat Exposition at Philadelphia, April 23 to 27, is being planned by the show committee of Oil-Heat Institute. With the sale of the 200th booth on January 25, the exposition moved on to widen the margin over the biggest previous show. Toward the end of January 102 firms had engaged well over 200 booth spaces, and more exhibitors were being added daily. The previous high was 183 booths sold for the 1941 show at Philadelphia.

Directors of the Distribution Division and the Accessory Division will meet at the headquarters hotel on Monday morning, April 22, followed in the afternoon by the final meeting of the old Board of Directors. Tuesday the membership of the Distribution Division and the Accessory Division will hold their meetings in the morning, and adjourn to the exhibition hall for opening ceremonies in the afternoon.

Wednesday, April 24, has been designated as Ladies' Day, and a detailed program is being arranged. The new board of directors will hold their first meeting after the Annual Meeting of the OHI membership. Thursday is Dealers' Day, and plans are not yet complete. The show closes Thursday evening to allow dealers and exhibitors to attend the annual dinner and dance.

Friday opens with an open forum session at the hotel, following which most of the rest of the day will be devoted to engineering subjects. Saturday is Philadelphia Day and the public invited.

Thirteen new exhibitors have been added to the roster published in the January issue. These are ABC of Philadelphia, Automatic Devices, Cleaver-Brooks, Combustion Utilities, Dwyer Mfg., Electrol Mfg., Measurement Methods, Morrison Products, Morse Lockhart & Morse, Oil Equipment Laboratories, Pemco, Plumbing & Heating Journal and Sheet Metal Worker, and Ray Burner.

◈

Edward Boehm, Vice President and Treasurer of Gar Wood Industries, Inc., Detroit, has been elected a Director. He is also a Director of General Instrument Corp.

BURNHAM'S NATIONAL ADVERTISING ON BASE-RAY

MEANS BUSINESS for You

For months now we have been telling your customers about the advantages of heating their homes with Base-Ray Radiant Baseboards.

The response has been terrific. Thousands of home owners all over the country have written us for further details and have received our literature on BASE-RAY.

There is already a huge potential market for this new and improved method of Radiant Heating — a method which is practically invisible, amazingly efficient and so completely "out of the way" that rooms become 100% livable.

This business is yours for the asking. Go out after it. Bring this competitive method of heating to the attention of your customers and watch your sales go up.

Make sure you are ready when you contact your customers. Be fully informed. Write now for our special folder, "Ratings and Installation Guide on Base-Ray".

It tells you the whole story on Base-Ray's advantages and what you need to know about ratings and installation procedure.

Burnham Boiler Corporation

IRVINGTON, N. Y., Dept. FO 26

Export Department

50 CHURCH ST., NEW YORK 7, N. Y.

Burnham
RADIANT HEATING
SINCE 1873

Fueloil & oil heat

Probable Burner Demand Up As Strikes Slow Output

PROBABLE DEMAND for domestic oilburners and units this year continues to increase in the face of labor unrest and continuing shortages.

More than fifteen months ago FUELOIL & OIL HEAT estimated that there would be 420,000 domestic oilburners sold in 1946, the first postwar year. Of this total, 284,000 were to be conversions from other fuels, predicated on a spendable income of $116 billion for the year. In spite of labor unrest predictions now forecast a spendable income of between $125 billion and $130 billion this year. Assuming that the lowest estimated income figure were reached, this would indicate a demand for more than 306,200 conversions from other fuels, and 318,500 at the $130 billion level of prosperity. The higher-than-estimated spendable income further would indicate about 90,000 replacement burners in 1946, against the prior estimate of 74,000. New homes were estimated to account for 62,000 oilburners in 1946, on a total of about 400,000 1- and 2-family houses to be built this year. In spite of urgent need and governmental efforts that are being made to stimulate building, it is doubtful if that many homes will be built this year in 1- and 2-family structures.

Based on the expected level of prosperity for this year the demand probably would be for nearer 450,000 domestic burners than for the previously estimated 420,000, but there is little hope in the present outlook that domestic oilburner production will reach much more than half that figure. Settlement of present labor difficulties in the near future, and an all-out drive for full reconversion and production could give us enough burners to meet the fall demand.

Labor unrest, which has become a serious national problem, has even greater and more immediate implications for the oilheating industry. In the face of rising demand for everything, including oilburners, this industry apparently is facing its most severe period of shortages. Manufacturers who have been fighting for scarce parts may be looking for them in an absolute vacuum before long.

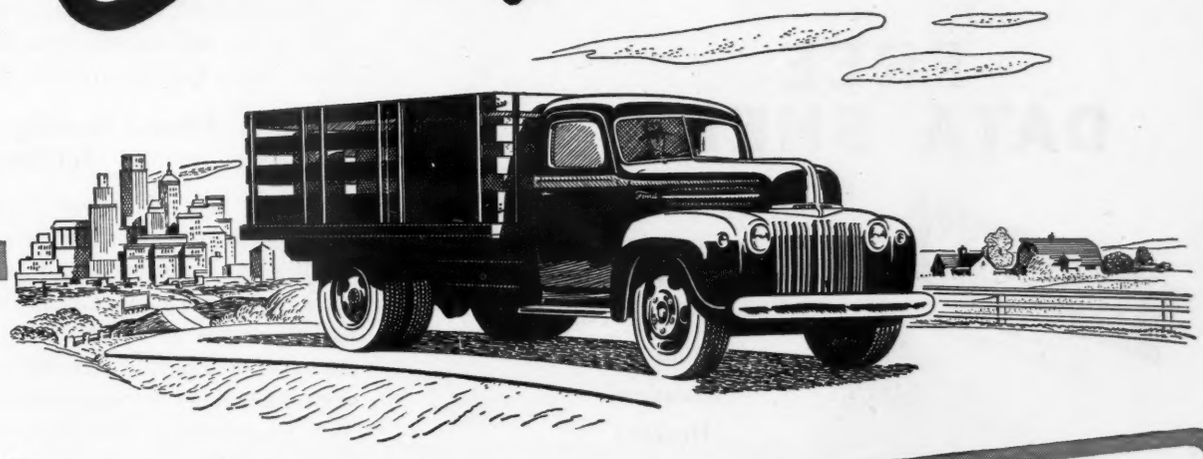
The plants of Delco, General Electric and Westinghouse which have been struck by the Electrical Workers were important sources of oilburner motors. These plants supplied a larger proportion of burner motors in the last six months than they did before the war, due to the withdrawal of some of the other former suppliers from the market. This stoppage, of course, affects all manufacture of motorized appliances, and piles up even higher the tremendous backlog of demand for products.

More basic, and with even wider implications, is the steel strike which cuts off an important raw material at the source. Though copper wire may be available for motors and transformers, none can be produced without cases for the transformers and shafts for the motors. Pumps and fuel units, boilers, metal ducts, and almost every item of heating equipment is directly affected by a steel shortage, and new building necessarily must stop. The present supply of repair parts has been cut so low due to the demand for new equipment, that there is danger of severe hardship if the strike is of long duration.

A portable, quick, handtight connection between gun and fill pipe..
FASFILL is a loose-tight connection, combining advantages of both. Adaptable to all fill lines. Sealing diaphragm permits faster filling and stepped-up pumping speed. FASFILL eliminates blowbacks, fill drip, and need for making up tightly-threaded connections. A complete connecting unit in itself — provides for 2", 1½", and 1¼" Male and Female connections. FASFILL speeds fuel oil delivery — eliminates blowbacks — saves time and labor.
only $11.50 COMPLETE
(SET of THREE SIZES)
In Carrying Case
F.O.B. CAMBRIDGE
SCULLY SIGNAL COMPANY
88 FIRST ST., CAMBRIDGE 41, MASS.
SCULLY FASFILL
PAT. PEND.
FASFILL
T.M. REG. U.S. PAT. OFF.

Ford

FORD TRUCKS *Everywhere!*



- **32 IMPORTANT New ENGINEERING ADVANCEMENTS**
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Industry Groups

Activities of local and national industry associations are reported monthly in this department. Secretaries are invited to send reports of their group's activities, to reach the editor by the 20th.

Mass. Oil Heating Assn. Elects Officers and Directors

The annual meeting of the Massachusetts Oil Heating Association was held at Boston's Fox & Hounds Club January 15. Entertainment was provided by seven past presidents of the group, who told each other what was good or bad about the way they had handled things while in office.

New officers elected for 1946 are Max Seltzer, president, Clarence A. Warner, vice-president, and Fred W. Heaney, secretary-treasurer, succeeding Fred Beckwith who held the post for a number of years, and who will now devote his full association time to Oil-Heat Institute of New England.

Directors are: A. B. Coup, John Dale, A. M. Gear, A. E. Gustafson, J. A. Leone, T. J. Swan and C. Y. Woodbury.

Wisconsin Oil Heat Association Holds Annual Dinner and Rally

AT THE WISCONSIN HOTEL, Milwaukee, on Jan. 25, the Wisconsin Oil Heat Asso. held its third annual dinner and rally. The featured speaker was W. A. Matheson, President of OHI, and his subject was "Where Do We Go From Here?"

Walter J. Schroeder announced the appointment of twelve committees.

Iowa's Master Plumbers Ass'n. Holds State Convention

TELFORD LAREW, PRESIDENT OF THE Iowa's Master Plumbers Assn., has announced that the annual state convention of the group will be held at the Montrose Hotel, Cedar Rapids, on April 28, 29, 30.

ASH&VE Annual Meeting, January 27-30

THE FIFTY-SECOND Annual meeting of the American Society of Heating and Ventilating Engineers was held in New York at the Hotels Commodore and Roosevelt, Jan. 28-30. A variety of subjects was presented at three technical sessions, including: A study of several coal-fired magazine-fed space heaters; application of high temperature liquid as a heat transfer medium; design procedure for the radiant panel systems; and branch take-off design and its effects on noise in duct systems.

Northwest Petroleum Association Has Two-Day Annual Convention

The 23rd Annual Convention of the Northwest Petroleum Association was held January 24 and 25 at the Hotel Nicollet, Minneapolis. Over seven hundred oil men from Minnesota and three surrounding states were registered, and six hundred of these attended the banquet Thursday evening, which was the seating capacity limit of the banquet hall.

Speakers were W. A. Matheson, president of Oil-Heat Institute, whose talk is reproduced elsewhere in this issue, Arthur R. Upgren, economist from the University of Minnesota, who talked on "The Business Outlook in Reconversion and After" and Warren C. Platt of "National Petroleum News," who described some of his experiences in Europe.

Second day speakers were June Hus-

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NONE BETTER

Oil Burners
1st in N.Y.C. Sales!

Let Your Business Reach a NEW HIGH . . . Put Paragon SELLING ACTION to Work for You!

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VANDERBILT 6-4414 **EVERGREEN 8-4100** JEROME 7-4000

HEMPSTEAD 1130 VALLEY STREAM 1880 LYNBROOK 4430 CEDARHURST 8990

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kinson of Minnesota Linseed Oil Paint Co., whose topic was "Industry Looks Ahead," Robert Gray of FUELOIL & OIL HEAT, outlining the opportunities of oil men in smaller communities to expand their fueloil sales to achieve a year-round balanced volume, and Leroy L. Snider of Nebraska-Iowa Oil Co., Blair, Nebraska, who gave examples of business improvement for the oil jobber.

Elwin E. Hadlick was re-elected president and secretary of the Association, and H. F. Horning re-elected assistant secretary. B. W. Smith of Minneapolis was elected treasurer of the Northwest group.

Directors elected for three year terms were Chas. J. Reiff, Kent, Minn., Angus T. McKay, Rush City, Minn., George G. Kray, Clara City, Minn., Leo M. Maland, Frost, Minn., William G. Hanson, Larimore, N. D., and Eric C. Koehler, Tappen, N. D.

Thirteen other directors were held over to complete their terms. These are Fred Bottemiller, R. G. Cornelison, D. M. Dickey, A. L. Folkestad, Kernel H. Helgerud, C. H. Howells, Carl Hvidsten, Ed H. Ness, Fred Roney, Harm Smook, Fred Struck, J. P. Wickenheiser and Jacob Wolf.

SILOO FUEL OIL TANK SOLVENT CLEANS and KEEPS CLEAN

SILOO FUEL OIL TANK SOLVENT keeps oil burner systems clean from *tank to burner.* It removes sludge and gum from clogged pipe lines, strainers and filters—disperses all water accumulations due to condensation. **SILOO FUEL OIL TANK SOLVENT** is nationally advertised and enjoys a reputation for assured profits in a wide market.

SILOO FUEL OIL TANK SOLVENT keeps the entire fuel system clean and free-flowing, thus eliminating the necessity of scouring and cleaning storage tanks. **SILOO FUEL OIL TANK SOLVENT** is non-inflammable, non-explosive, non-corrosive and non-toxic. Wholesale distribution only. Write today for particulars.

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New England Oil Men Honor Jack Scott

THE INDEPENDENT OIL MEN'S Association of New England held its annual meeting at Hotel Statler, Boston, Jan. 10. More than three hundred oil men attended a testimonial dinner to the retiring President, John W. Scott. Scott was presented an illuminated scroll from the members to serve as a permanent reminder of his effective work on numerous Government committees and as head of the Association for five years. In addition, he was presented a volume of letters from men in the industry where more personal expressions of appreciation were inscribed. John Birmingham, President of White Fuel Corp., was elected the new President.

George Baldwin, Detroit, Organizes Own Oil Company

AFTER SELLING HIS interest in the Fuel Oil Corporation of Detroit, of which he was president, George E. Baldwin announced January 26 the organization of the Baldwin Oil Co., with headquarters in the Fox Theatre Building, Detroit. The company has arranged to handle the exclusive distribution of Sinclair heating oils in the Detroit area. Sinclair has a pipeline for fueloils into the city. Baldwin was during the war a member of OPA's Industry Advisory Council for rationing.

American-Standard Plans National Ad Campaign

AMERICAN RADIATOR & Standard Sanitary Corp., has completed plans for an extensive national advertising campaign in 1946, according to H. L. Spindler, manager of advertising and sales promotion. Schedules have been arranged in *Saturday Evening Post, Time* and shelter group magazines as well as building and business papers.

Advertising with highlight a new "Mark of Merit," a striking symbol of fine heating and plumbing to be displayed on the Standard and American lines. The symbol represents sun and water—the warmth of the sun for heating and the water symbolic of plumbing.

Announcing a New Line of

HOMEASE

HOMEASE PRODUCTS DIVISION . BOGUE ELECTRIC COMPANY

PRODUCTS

WATER TREATING EQUIPMENT ★ BOILER BURNER UNITS

CONVERSION OIL BURNERS ★ OIL AND GAS FIRED BOILERS

STANDBY POWER UNITS ★ HOME VENTILATING EQUIPMENT

WATER HEATING EQUIPMENT ★ ELECTRONIC RECORD PLAYERS

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● Write now for details about the complete new HomEase line, our Dealer plans and sales building programs. Please address Dept. 8.

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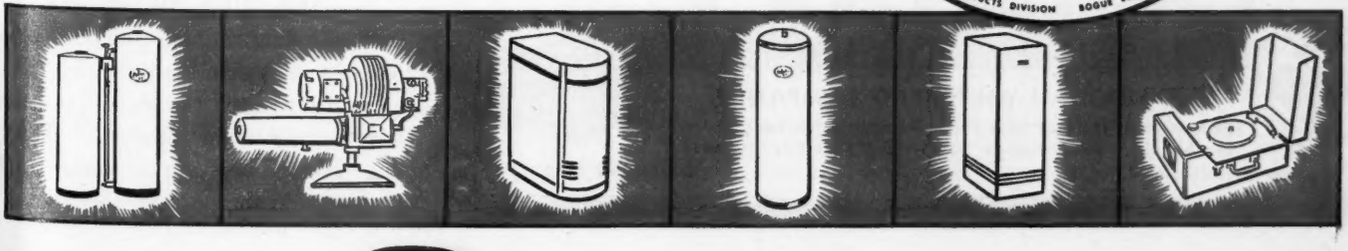


Manufacturers Activities

Heil Shows New Line

THE HEIL CO., Milwaukee, has published an attractive new booklet devoted exclusively to the first published showing of its new line of oilfired home heating units. The company explains that these are not "dressed up" prewar models, but completely new from heat exchanger to casings.

Heil made a survey of its dealer outlets to determine the features they wanted in the new equipment. After months of testing and research, the units have been designed and turned over to designers who added smartly styled exteriors.

Sola Shows Transformers

A NEW BULLETIN, "Electrical Power, Disciplined," released by Sola Electric Co., Chicago 14, contains a discussion of the construction and operating theory of the constant voltage transformer, engineering and operating data, a survey of line conditions, and a section on new developments. The catalog section lists 31 standard types in a wide range of capacities.

Carrier Names Distributors

FIVE DISTRIBUTORS have been named recently to handle Carrier airconditioning and refrigeration equipment. They are: General Utilities Distributors, Chicago; Appliance Distributors, Inc., Indianapolis; Thiele-Winslow Co., San Antonio; Allied Distributing Corp., Norfolk; and Bickford Brothers Co., Rochester and Buffalo.

Carrier now has named 32 distributors under whom are 3,600 dealers. In addition 190 direct dealers have been appointed.

Sinclair Fire Box Back

THE SINCLAIR FIRE BOX, a house organ published monthly "in the interest of fuel-oil sales in the Central District" is being issued again after a lapse of nearly three years. The last issue, Volume 10, No. 5, was published in May, 1943.

The paper is circulated to members of the Sinclair fueloil and Diesel oil sales staff and dealers throughout the Middle West territory.

Brown Opens School

BROWN INSTRUMENT will start its School of Instrumentation for the second time in the 1945-46 season at Philadelphia, on February 18 and continue to May 22. Special emphasis will be put on the company's new electronic instruments, including improved models that are being developed.

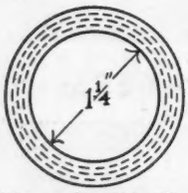
Carrier Book Covers Cooling Large Buildings

CARRIER CORP., Syracuse, N. Y., has issued a 40-page catalog in color titled "Air Conditioning for Multi-Room Buildings." Advantages of air conditioning for hotels, hospitals, office and apartment buildings are told, and the five Carrier systems explained in photographs and charts.

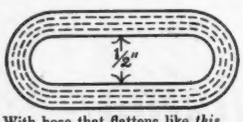
G-E Book on Careers

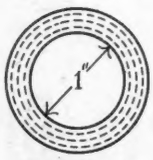
GENERAL ELECTRIC has published a booklet for veterans and others titled "Career Opportunities in the Air Conditioning and Refrigeration Business." This 44-page book covers opportunities for employment in the heating, cooling and re-

Here's the Reason Why "NEW TYPE CORD" Means Better Profits from Every Truck!



When you buy 1¼-in. "Newtype Cord," its full inside diameter will be retained; *but* . . .





With hose that flattens like *this*, you would actually get *less* flow than through "Newtype Cord" having only 1-in. diameter.

THIS PATENTED FUEL OIL HOSE has a wire-reinforced carcass that will not flatten, even when hose is partially reeled, and a "Synplastic" (synthetic) tube that does not swell through contact with oil. Result: retention of the original diameter under all conditions, permitting a full, fast flow from truck to tank. Each delivery takes less time; trucks make more deliveries per day; and the cost of doing business is materially reduced.

"NEWTYPE CORD" FUEL OIL HOSE is light weight, easy to handle; and has a cover that will take plenty of punishment . . . additional reasons for equipping your trucks, now, with this *quick-delivery* hose.

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EVERY STOP A DROP!

"thanks to Scully VENTALARM" writes this Philadelphia driver

VENTALARM

makes it unnecessary for the driver to enter the home. He delivers oil whether the customer is at home or not.

VENTALARM saves time — eliminates non-delivery stops — prevents wasteful spills — increases the efficiency of your entire organization.

VENTALARM saves you $3 to $4 per installation per year.

"I've had a suburban route for more than six years now and those people are the hardest ones to catch at home. My company works on the degree day route service, and people don't have to worry about ordering oil. And I don't have to worry about them not being at home—thanks to Scully VENTALARM."

(signed) FRANK A. GUINTA, Jr.
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c/o Frank F. Mathers, Inc., 740 S. 52nd St., Phila., Pa.

Over 2000 Major and Independent oil companies have installed more than 400,000 VENTALARMS on their customers' fuel oil tanks

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There is also a Scully VENTALARM designed for automobile and truck gasoline tanks

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frigeration business, both for the man who wants to operate as a dealer and those who want a job in the industry. Various trades and phases of the business are treated.

Base-Ray Guide by Burnham

BURNHAM BOILER CORP., Irvington, N. Y., has published a Ratings and Installation Guide for the new Base-Ray radiant baseboard. The booklet is illustrated with 25 drawings and photographs, and the text explains calculation and installation technique. Tabulated ratings guides are included by both the standard and the hy-power models of the panel.

◈

Lau Entertains

LAU BLOWER CO., Dayton 7, Ohio, entertained 71 veteran employees at dinner with the motif, "Pioneers of '46." All who attended had more than five years of service with the company, and ten employees had more than ten years' service. Attendance at the dinner party represented about 25% of the organization.

Honored at the party were thirteen ex-service men who have returned to the firm. In all 95 men went to the services.

Organize "Marsh Clan"

JAS. P. MARSH CORP., Chicago, celebrated the 80th anniversary of the founding of the company with a ceremony at which the "Marsh Clan" was established. Oldest employee, Charlie Lubeck, was presented with a diamond Clan pin. Other groups range from 5 to 25-year service.

Brown Equipment Complete

PURCHASE AND INSTALLATION of $500,000 in new manufacturing, processing and development equipment, started in 1945, will be completed this year, according to Henry F. Dever, president of Brown Instrument Co., Philadelphia, industrial instrument division of Minneapolis-Honeywell Regulator Company.

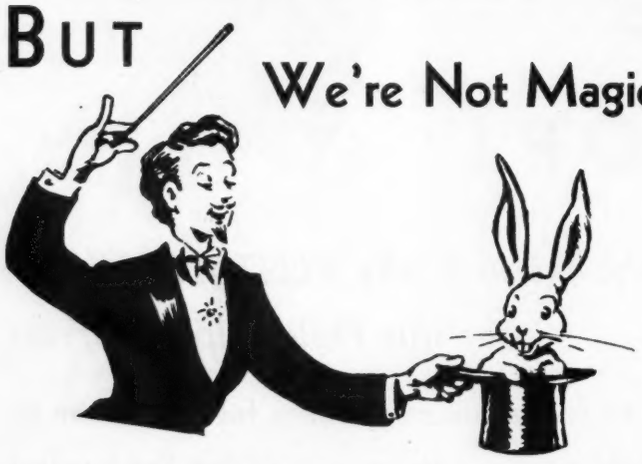
◈

U. S. Department of Labor Fueloil Prices November

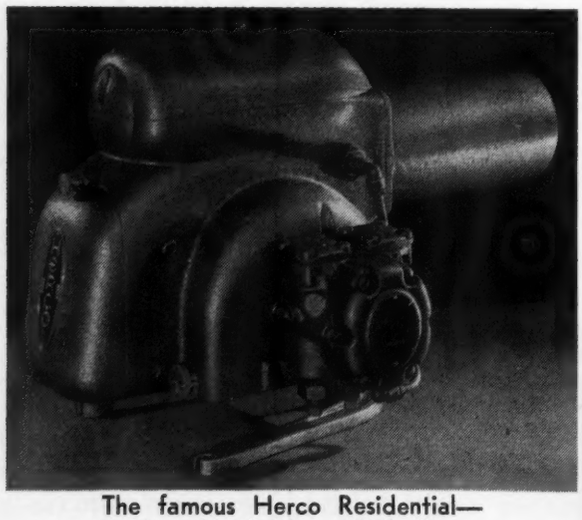
FIELD INVESTIGATORS for the Department of Labor monthly check prices of principal fuels in several cities in each section of the country. Getting retail quotations from various suppliers in each market, the prices are averaged and published. Those in the table that follow were taken Nov. 15 (cents per gallon):

	Range	No. 1	No. 2	No. 3
Boston	9.10	8.96	7.60	7.60
Bridgeport	8.80	...	7.50	7.50
Fall River	...	...	8.30	...
Manchester	9.60	...	8.30	...
New Haven	8.80	...	7.50	...
Portland, Me.	8.70	8.60	7.50	...
Providence	8.80	8.72	7.60	...
Baltimore	...	8.35	7.50	...
Buffalo	9.40	9.40	8.50	8.50
Newark	...	8.75	7.50	7.50
*New York	...	...	7.58	...
Philadelphia	...	8.48	7.43	7.41
Rochester	9.50	9.50	8.20	8.20
Washington	...	8.80	7.90	...
**Chicago	7.92	7.41	7.40	7.41
***Cleveland	...	8.39	...	7.88
**Detroit	...	8.45	7.93	7.42
**Des Moines	...	8.29	7.75	7.75
Milwaukee	8.50	8.50	8.00	8.00
Minneapolis	8.34	8.15	8.06	8.04
Omaha	...	7.90	7.45	7.40
***St. Louis	8.47	7.83	7.55	7.55
St. Paul	8.20	8.00	8.00	7.95
***New Orleans	...	8.72	7.21	7.21
Norfolk	...	8.50	7.30	...
Richmond	...	8.80	7.50	...
**Denver	...	8.67	7.14	...
Portland, Ore.	...	7.06	6.05	...
***Seattle	...	7.47	6.44	...

*Price includes 1% sales tax.
**Price includes 2% sales tax.
***Price includes 3% sales tax.



No, we aren't magicians . . . we can't pull rabbits or oil burners out of a hat. But we do have the reputation of building *top-quality* burners. And for just that reason, we won't put anything but *true Hercos* on the market. Right now we are making just as many of these dependable, efficient Herco Oil Burners as available materials permit. If you can wait for Hercos, you'll profit by supplying your customers with an oil burner that will mean service-free satisfaction for years to come.



The famous Herco Residential—equipped with Mercoid Visaflame.

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1941-1942 SPECIFICATIONS BOOK OF OIL BURNERS AND FUELOIL

Gives specifications for 2200 models and makes of burners by 237 manufacturers. Gives grade of oil officially specified for each burner, method of atomization, air source, ignition data, oil feed, gph rating and motor size **50c**
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"Oilburner Combustion Chambers." Complete and concise study, illustrated with charts, illustrations and reference tables. Text covers both precast and those built on-the-job. 23 pages **50c**

"Degree Day Handbook." Useful for computing oil consumption by the degree day method **$3.00**

REDUCING FUEL OIL BILLS

This booklet will help you show homeowners, in a language they can understand, how you can save them money. Minimize your customers' oil bills and make a real profit with the right kind of service **50c**

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This invaluable booklet shows you how you can test your customers' burners by modern methods obtaining a high CO_2 rating and a low stack temperature. Be efficient and use this up-to-date booklet in your service work **$1.00**

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This book is essential in your repair and service work. Gives 10 detailed analyses of the most common basic service problems and shows you how to solve them efficiently **50c**

Oil Burners, by Kalman Steiner, includes discussion of fundamental and advanced engineering and methods of oilburner design, construction, installation, operation and maintenance. Covers the characteristics, specifications, combustion, handling, and applications of fueloil. 436 p., many tables, charts, pictures .....**$4.50 each**

"Short Cuts to Heat Loss Data." When you're figuring heat loss you can save time by using this accurate, easy method getting fast results without lengthy figuring **25c**

"Comparative Heating Costs With Oil, Gas, or Coal." Information on how to forecast oil consumption, based on an analysis of over 1300 installations **25c**

"Showdown; Oil vs. Gas Cost." Here in a 4-page booklet is the unbiased story of just what a group of bill-weary consumers found out about gas heating costs, and why many of them have switched to oil .....**Price 25c**

"Installation Cost Sheets." Form for keeping an accurate record of the costs on each installation. Helps protect profits by showing exactly how much the installation expense is on each job. Size 8 x 21½ folded twice to fit 8½ x 11 binder . . . 100 sheets **$8.25**; 200—**$9.15**; 300—**$10.00**; 500—**$11.85.**

"Operating the Automatic Delivery System." Operation and refinements of a simple card system which tells to the day when a customer needs oil. Based on degree days. Organizes work of men and trucks .....**50c each**

"Catalogue of Oilburner Manufacturers, 1942." Companies classified by the type of burners they make. Covers domestic and industrial burners, oilfired water heaters, boiler-burner units, airconditioners, range burners, space heaters. Names of principal officials, mail address and year established. 21 pages .....**Price $2.00**

"BETTER OILHEATING"

Nearly 100 text pages and 125 illustrations besides many tables and charts and short service hints. Bound in heavy paper. 8½" x 11". Covers trouble-shooting, field repair and efficiency testing to save oil. Valuable book for individual study or supplementary text for service schools. For all dealers, service and installation men. Many topics cover: fireboxes, draft, wiring, motors, controls, nozzles, pumps, baffles, efficiency, heating, etc. **$2.00**

Because of the thousands of small orders we receive, we ask that cash, stamps, money orders or checks be sent with all orders. If you wish to order C.O.D., an extra charge of 10% is made to cover shipping and collection fees.

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OPA Authorizes FHA to Set New Home Ceilings

TO SPEED CONSTRUCTION of new rental housing, the Office of Price Administration and the Federal Housing Administration announced January 28 a joint program under which OPA has delegated authority to FHA to establish ceiling rents on new rental housing units.

This agreement was made in connection with the newly instituted preference rating system for veterans' housing under which the FHA, as agent of the Civilian Production Administration, processes and issues priorities for critically short building materials.

The arrangement between OPA and FHA, already in operation, covers not only new rental housing built with priority assistance but also new rental housing built without priorities if a commitment for mortgage insurance is made by FHA.

Ceiling rents on the new housing units built for rent will be set by the FHA in advance of construction on the same basis as the OPA has been establishing ceilings on new rental units since November 23, 1945. This procedure, designed to stimulate the building of new rental housing units, provides due allowance over comparable rents for increases in building cost since 1939.

This system of permitting the FHA to establish rental ceilings on new rental housing units will enable builders to get their rental ceiling commitments at the same time they obtain mortgage insurance commitments, or, in the case of priority housing, at the same time they are given priorities for building materials.

Under joint agreement of the two agencies, the FHA is instructing its field offices to establish rentals for such newly built units in all OPA rent control areas at not exceeding 20 per cent above rentals on comparable properties as of the area rental freeze date. The OPA, in turn, will automatically accept these rental rates as the maximum legal rents. Owners of the projects will be required only to file a registration statement with their local OPA rent office within 30 days after the housing accommodations are first rented. The rent listed on the registration statement, if within the FHA rental commitment, will become the maximum legal rent.

Provision has also been made for cases where cost increases, occurring during the construction process and after the original determination of the rent by the FHA, require a change. If the rent has not yet been registered with the OPA on the property accepted by a tenant, an adjustment may be made by the FHA. After registration, adjustments in all rents for newly constructed rental units, whether the original rent was set by the OPA or the FHA, will come under the OPA procedures.

In general, the agreement between the two agencies is similar to that which existed during the war when rents on new construction were established by the FHA in connection with the issuance of priorities. These rents became the legal maximum rents under OPA regulations. On October 15, 1945, the removal of priorities on building materials and the rescinding of War Production Board Order L-41 made it necessary for the OPA to establish maximum rents on new construction directly. This resulted in the OPA adopting its present standards to encourage rental construction and still

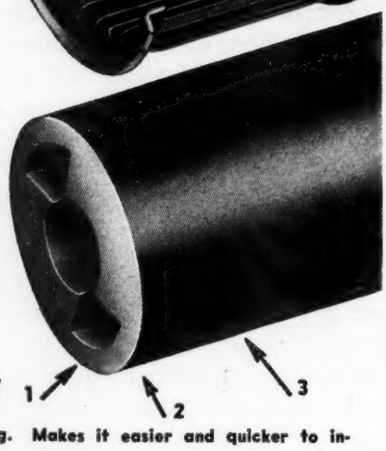
New! L-R Type D-X FLEXIBLE COUPLINGS

for Oil Burners, Air Conditioning, Fans, Pumps, etc.

Made entirely of tough synthetic rubber. Secure fitting and grip. No metal to metal contact. No looseness. No rattle. Easiest handling.

Now the new L-R "D-X" brings you the simplest, most secure flexible coupling yet made for oil burners. Has tough synthetic rubber body without ribs to loosen or rattle. Slides into jaws on fan hub in a jiffy, grips and *holds*. It can be easily and quickly assembled, even in the dark and in close quarters.

Made in sizes to fit all applications. Equip your product, or service your customers with this easily installed L-R "D-X" for better, quieter, longer performance—greater satisfaction. Write for facts and engineering data.



NEW L-R "D-X" RUBBER COUPLING BODY

1 Wide protective collar, strengthens coupling. Makes it easier and quicker to install—in dark or close quarters.

2 Molded center unit in both ends fits fan hub and shaft connecting unit.

3 Molded synthetic rubber body—noiseless, flexible.

(Other L-R Flexible Couplings are available for services up to 2500 H.P.)

OHIO

LOVEJOY FLEXIBLE COUPLING CO.

5012 W. Lake Street • Chicago 44, Ill.

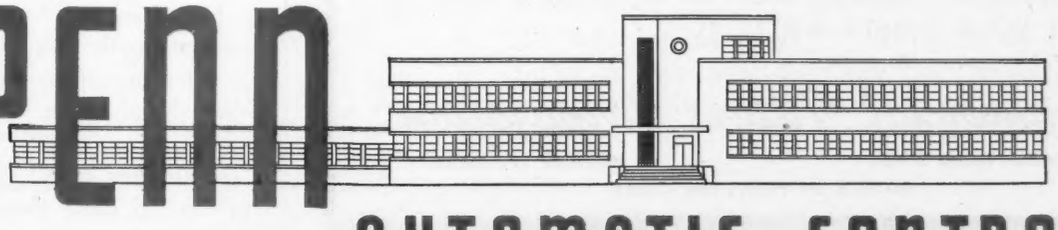
He's Paid to Find Fault!

Yes, only perfection suits this PENN operator! He's one of many inspection and quality control experts in PENN's modern factory . . . employed to reject any product that doesn't measure up to extremely rigid standards . . . *to assure you the best possible controls.*

It is this skilled quality control and expert inspection that are so important in helping you win bigger profits and gain better satisfied customers. These benefits are assured for you because PENN does everything possible to provide controls that are dependable and efficient. For instance, here, this PENN expert uses a Dial Indicator gauge. He's adjusting exactly, in accordance with rigid specifications, the travel of the actuating pin which opens and closes the contacts in a PENN Magneseal switch in PENN Controls.

Before we send them to you, PENN Controls must be perfect in every way. They are designed, built and *thoroughly* tested to give you the *best in automatic heating controls.* In PENN's complete line you'll find a control for every type of heating job. See your local jobber or write *Penn Electric Switch Co., Goshen, Ind.* Export Division: 13 E. 40th Street, New York 16, U.S.A. In Canada: Penn Controls, Ltd., Toronto, Ontario.

PENN



AUTOMATIC CONTROLS

FOR HEATING, REFRIGERATION, AIR CONDITIONING, ENGINES, PUMPS AND AIR COMPRESSORS

fueloil & oil heat

provide fair rents for tenants, and these standards will constitute the basis on which both the FHA and the OPA will establish maximum rents on new construction in the future.

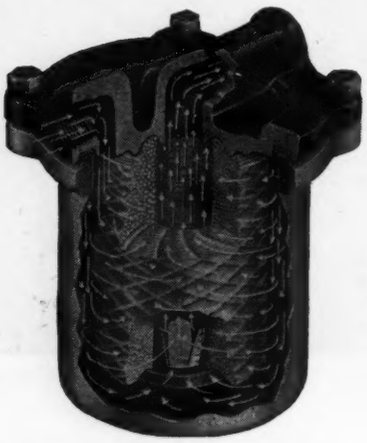
The OPA will continue to establish maximum rents on new rental housing projects erected in rent control areas in cases where the construction is not assisted by priorities and where the mortgage is not insured by the FHA.

The OPA will use the same standards in computing maximum rents on these projects as it has been using recently, and as the FHA will, under the joint agreement, use for all others.

The OPA will also continue to establish maximum rents in all cases of major capital improvements and conversions of existing structures, whether or not the use of priorities is involved. In this regard it is the policy of the OPA to encourage builders to convert present structures into additional housing units, and as additional materials permit, to make major capital improvements on present rental structures. In such cases the maximum rents determined will provide adequate allowance for increases in building costs since before the war. Prior commitments in regard to the maximum rent in such cases may be obtained from the OPA.

THE KEY TO CLEAN OIL

Fulflo FILTERS
REG. U.S. PAT. OFF.



Every drop of oil that goes through a *Fulflo Filter must* pass through one of the diamond-shaped filtering tunnels of the genuine Honeycomb Filter Tube . . . where it is subjected to many successive fine filtrations. This is true depth filtration . . . found only in FULFLO.

Fulflo is the ace of oil-burner filters . . . not because of a fancy profit . . . not because of lavish advertising . . . not even because of its proven efficiency. The real reason is because leading oil and oil burner dealers everywhere have found that whenever they install a FULFLO FILTER there will be no complaints due to dirty oil . . . Microscopic impurities and invisible gums and resins that can cause fouled points or clogged nozzles don't even reach the pump . . . to say nothing of the nozzle. You can forestall and forget complaints due to dirty oil. Ordinary filters, or even strainers remove ordinary visible impurities . . . but FULFLO gets the troublesome minute impurities too tiny to see. IF NOT AT YOUR JOBBER WRITE TO . . .

Commercial Filters Corporation

28 WEST THIRD STREET BOSTON 27, MASS.

AGENTS IN PRINCIPAL CITIES

FULFLO FILTERS SAVE SERVICE CALLS

Home Priority Applications Start With a Rush

APPLICATIONS COVERING 18,764 dwelling units were received by field offices of the Federal Housing Administration during the first six working days under the new preference rating system for veterans' housing, FHA Commissioner Raymond M. Foley has announced.

Of the applications received from January 15, when the system went into effect, through January 22, 44 per cent were for units to sell for less than $7,500 or rent at less than $60 a month.

Under the new system, aimed at expediting construction of moderate-cost housing with veterans being given preference, HH priorities are issued for 10 items of building materials now in critical short supply either to individual veterans or to builders who agree to hold the accommodations for sale or rental to veterans during construction and for 30 days thereafter.

The top permissible sales price is $10,000, including land and improvements, and the top rental permitted is $80 a month.

The first week's report was termed "encouraging but still inconclusive as far as price distribution throughout the country is concerned," by Mr. Foley. "We have urged," he continued, "that every effort be exerted by our field directors among home builders to induce the production of housing at price levels as much below the maximum as feasible.

"It is just too early to arrive at any sound judgment. We will have to wait for more figures from all parts of the country but we shall keep a close watch on the situation."

Mr. Foley said that during the first week the bulk of applications originated in three principal centers of congestion —the Washington, D. C. district, Detroit and Los Angeles. He pointed out as "encouraging signs" at the moment that in two of these districts—Washington and Detroit considered "high cost" areas —the per cent of applications for sales

"X" BOILER LIQUID

. . . and not alone in the sensational way it goes to work on leaks, but also in the profits and satisfaction that *pour in* when you *pour* "X" *out* of that famous can into a leaky boiler.

"X" BOILER LIQUID has been the lifesaver of failing heating systems for nearly 30 years . . . it flows to the leak in low or high pressure boilers with the circulation of the water and actually mends from the OUTSIDE! . . . not just a quick plug or temporary seal, but a sound, rugged repair that puts a boiler back into lasting, steady service. In pipes and fittings, "X" also seals sand holes, poor threads, split nipples and cracked castings. "X" is a colloid and positively contains no solids—no meal, shavings, soap or water glass to damage circulation. Have "X" ready this Winter.

"X" Heating System Service Products

"X" has the full line of heating system service Products that are indispensable for you . . . . "X" FLUSH and RUST-OFF — the combination package of two interlocking containers . . . "X" FLUSH to clean the system and halt foaming and surging. "X" RUSTOFF to keep boiler water clean and retard formation of rust and scale.

"X" BOILER LIQUID that finds and seals every heating system leak without shutting down or dismantling the heating plant.

"X" LABORATORIES, INC., 25 W. 45 ST., NEW YORK

of less than $7,500 and rentals of under $60 a month were higher than the national 44 per cent average.

In the future, Mr. Foley declared, FHA plans to gather more detailed field figures enabling a percentage breakdown in seven price and rental classes as the volume of applications increases.

Under the new priority system, which stresses speed and simplicity, the Civilian Production Administration hopes that about half of the available critically short building materials can be channeled into construction of homes for veterans at prices they can afford to pay for shelter.

Applicants for priorities must satisfy FHA field offices that the proposed sale price or rent is reasonably related to the proposed accommodations and show that they are ready to begin construction within 90 days.

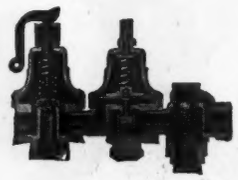
Mr. Foley again emphasized the necessity for speed in processing applications for priorities which, he pointed out, is done without reference to the type of financing proposed.

The CPA, through the National Housing Agency, delegated to FHA the task of processing the applications. It is hoped that under the preference system production of 400,000 to 500,000 units can be assured this year.

Watts PRODUCTS

FOR OIL HEATING PROFITS

Hot Water Heating Systems should have the *Protection* of Watts REGULATOR UNITS

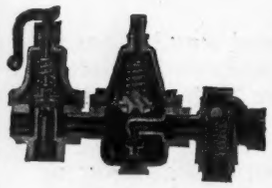


Watts No. 45 Hot Water Heating Regulator

Watts Regulators fully and automatically supply the hot water system with water free from scale and foreign matter. Completely protect the system against EXCESSIVE EXPANSION PRESSURE. Comply with A.S.M.E. standards and Watts high standards of materials and workmanship. Moderately priced. Profitable to install.

No. 45—REGULATOR

Self-contained, all-bronze heating regulator, complete in itself but designed with smaller reducing valve than the No. 38. Same strainer and A.S.M.E. standard adjustable lever-type relief valve as on No. 38. Reducing valve set to deliver 10-13 lbs. to the system. Relief valve set to relieve at 25-30 lbs. Size ½" I.P.S. Female Connections. Popularly priced.



Watts No. 38 Hot Water Heating Regulator

No. 38—REGULATOR

Superlative all-bronze heating regulator. Consists of a strainer, automatic pressure regulator, with large waterways for quick filling, A.S.M.E. standard adjustable lever-type relief valve. Reducing valve set to deliver 10-13 lbs. to system. Relief valve set to relieve at 25-30 lbs. ½" I.P.S. Female Connections.

NATIONAL OIL HEAT EXPOSITION COMMERCIAL MUSEUM OHI PHILADELPHIA APRIL 23-27 1946

Temperature and Pressure Relief Valves
Pressure Relief Valves — Vacuum Breakers
Pressure Reducing Valves (Water, Air, Steam)
Low Water Cut-offs — Boiler Water Feeders
Tempering Valves — Hot Water Heating Units

WATTS WATTS REGULATOR COMPANY Lawrence, Mass.

WATTS *a name to remember* for devices that PROTECT-CONTROL

Local Chambers of Commerce Report on Housing Shortage

MORE THAN 1100 cities in every state reported to the Chamber of Commerce of the United States, January 25, that lack of materials and equipment is primarily responsible for the current serious housing shortage encountered by veterans.

Replying to President Eric A. Johnson's inquiry for a report on the local situations and possible solutions, the chambers in those cities and towns said four principal steps should be taken:

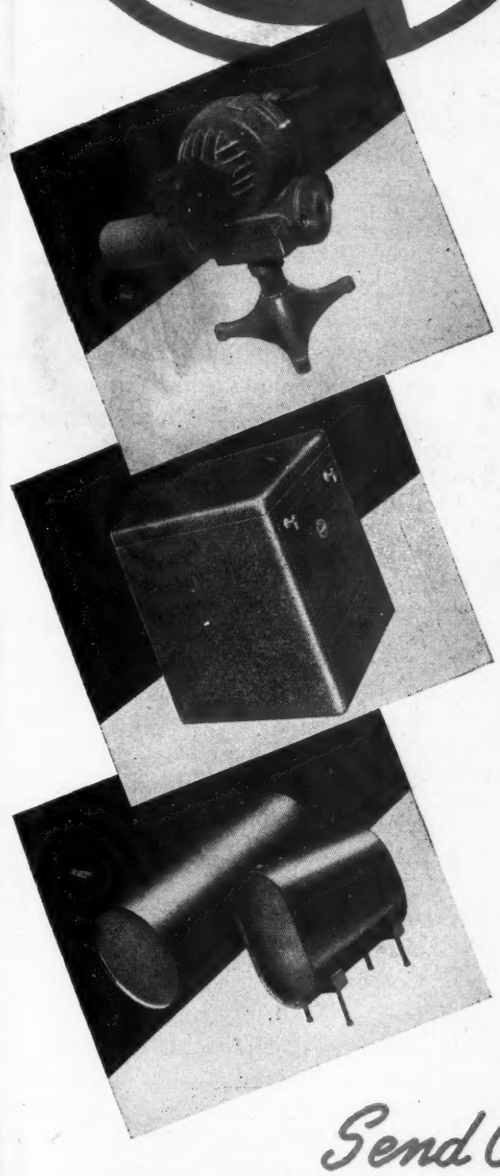
1. Overcome reluctance of OPA to make price adjustments urgently needed.
2. Speed the release of unused Army barracks, prisoner-of-war camps and like buildings either for conversion to residential use or to be torn down to permit use of lumber and other materials in new housing units.
3. Release lumber, plumbing, heating and other equipment now in the hands of the Army and Navy.
4. Stop diversion of lumber for export. (OWM&R recently said exports were not a major consideration.)

Replies available show 596 communities reporting the housing situation acute; 401 reported it serious, and only 75 said they had no housing problem at all. Only a small percent reported the number of houses needed, but recent studies indicate the acute need is somewhere between 800,000 and 1,000,000. About 880 communities laid the shortage to lack of material and 165 reported a lack of skilled labor.

Council Sees 500,000 New Homes This Year, If—

ATTACKING OPA as "inexcusably slow and reluctant" in price adjustments of building materials, and asking for less, rather than more, government regulation and financing, Producers' Council on January 21, outlined a program to speed housing in a statement to Wilson W. Wyatt, Federal Housing Expediter. Besides better machinery for adjustment of prices

THE DEPENDABLE LINE OF OIL HEATING EQUIPMENT



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HERE is an outstanding oil burning air conditioner heating unit combining all the features for modern home comfort. Write for full information regarding this outstanding unit and other Certified heating, storage and distribution equipment specially adapted to the oil trade.

Send Coupon NOW!

STAINLESS & STEEL PRODUCTS COMPANY
CERTIFIED HEATING DIVISION
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PLEASE SEND US COMPLETE INFORMATION ON THE ITEMS CHECKED BELOW:

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COMPANY_____

ADDRESS_____

BY_____ TITLE_____

fuel oil & oil heat

"which do not cover actual cost of building materials production let alone provide a fair profit," the Council asked for a campaign to recruit labor for the production of materials and the construction of houses. They emphasized that government appropriations for housing construction in no way increases the supply of either materials or manpower, the chief reasons for present lack of building.

"A painstaking analysis of housing need and supply reveals that only 850,000 new nonfarm dwelling units are needed this year," the Council reports. "The over-all requirement is much greater, but the less-urgent need can and must be filled later.

"The Council's Market Analysis Committee estimated last fall, after V-J Day, that 450,000 nonfarm dwelling units could be built this year, provided manufacturers of building products were not handicapped by bottlenecks such as manpower, raw materials, and pricing problems.

"As matters now stand, however, existing bottlenecks will make it difficult to reach the 450,000 figure. But on the other hand, we believe that figure can be exceeded if the bottlenecks are removed promptly.

"Recent surveys conducted by the Council indicate that the production of building materials and equipment can reach the 1940 rate of production this year, which is enough to build 50,000 units per month, if the handicaps are removed. If the 1940 production rate is reached by the middle of the year, it might be possible for the home building industry to construct 500,000 or more units in 1946.

"In addition to the new homes which can be built in 1946, NHA Administrator Blandford has estimated that 75,000 additional units can be obtained this year through conversion of existing units, and Congress has appropriated funds to move 100,000 units of temporary war housing to shortage areas. The total of new construction and these emergency provisions might total to about 700,000 units or to over 80% of the urgent immediate need, the balance of which can be taken care of early in 1947.

"During 1947, there should be enough building products to build from 800,000 to 900,000 units, or as many as ever have been built in one year, unless current handicaps continue."

◈

Lewis A. Jones, until recently with the WPB and special assistant to the Director of Procurement, Treasury Department, has joined Allied Control Co., Inc., as Director of Procurement. Mr. Jones, a former president of the National Association of Purchasing Agents previously was with General Cable Corporation as director of purchases and prior to that was Vice President and Director of Purchases for the N. Y. Power and Light Corporation.

Robert P. Quinn has been appointed assistant director of sales of Allied and Packaged Air Conditioning for Carrier Corp. Mr. Quinn has just been discharged from the Armed Forces after serving three years as a Major in the A.A.F. Before entering the service he was associated with Shook and Fletcher Supply Co., Carrier distributors in Birmingham, Ala., as manager of the air conditioning and refrigeration division.

BIGGEST OIL HEAT CAMPAIGN EVER—

now reaching millions through

NEW MOBILHEAT ADS

in hundreds of newspapers!

To help dealers everywhere to sell more burners and more fuel oil, Socony-Vacuum has launched the greatest promotional campaign on record for oil heat.

Repeatedly, Mobilheat ads are telling millions that oil heat is the cleanest, cheapest automatic home heating there is. These ads are also selling home owners on the economy and convenience of Complete Mobilheat Service . . . are persuading them to order Mobilheat by name.

That's your cue to bigger profits from today's expanding oil heat market. Mobilheat is one of America's largest-selling fuel oil brands.

BE READY WITH

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SOCONY-VACUUM HEATING OIL

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Socony-Vacuum Oil Co., Inc.

Tune in "Information Please"—Monday Evenings, 9:30 E.S.T.—NBC

Right before your eyes!

CO_2 Combustion Check-up

DRAFT GAUGE

STACK THERMOMETER

FIRE EFFICIENCY FINDER

The FYRITE Combustion Test Set gives you everything you need to detect furnace conditions that waste fuel. The FYRITE CO_2 Indicator quickly shows whether the fuel receives the proper amount of air. The Stack Thermometer test shows how well the furnace absorbs the heat of the fuel burned. The unique Fire Efficiency Finder correlates CO_2 and stack temperature readings to show at a glance loss due to heat carried away in the flue gases. The DRAFT-RITE Gauge is indispensable for properly adjusting the draft.

These instruments are designed especially for the heating man's service kit. They are easy to operate, sturdy, durable, lastingly accurate. Use them now—to point the way to necessary repairs and adjustments that secure efficient fuel utilization... and to build an ever-widening reputation for reliable, expert service.

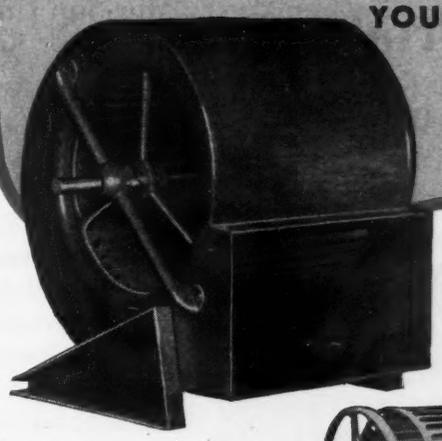
HEATING SERVICE DIVISION

BACHARACH INDUSTRIAL INSTRUMENT CO.

7000 BENNETT STREET • PITTSBURGH, 8, PA.

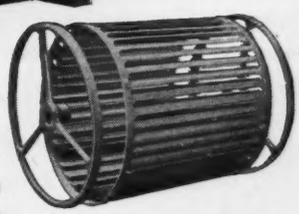
Get the complete VIKING BLOWER

AT A LOWER COST THAN YOU CAN ASSEMBLE ONE YOURSELF



Streamlined **Housing Takes Less Space**

Improved 3-pc. Blower Wheel



Delivers more air at a slower speed than any blower wheel ever developed. Larger inlets, floating aerodynamic center, exposed blade ends . . . three revolutionary developments found only in VIKING Blower Wheels.

New *Streamlined* Bearing

Air foil cross section reduces air resistance to a minimum.

See for yourself **HOW** *you get* **MORE AIR** *in* **LESS SPACE** *at* **SLOWER SPEEDS** *with* **LESS HORSEPOWER** *at a* **LOWER COST**

SEND FOR VIKING'S NEW BLOWER CATALOG

Get all the facts on Viking's war production methods. See why you can buy the complete VIKING Blower cheaper than you could assemble it yourself.

Viking

ARMY NAVY FOR EXCELLENCE

AIR CONDITIONING CORP. 5600 WALWORTH AVE. CLEVELAND 2, OHIO

New Products

Control Varies Blower Speed With Temperature

MODULATION of blower speed in winter airconditioning systems is offered by National Thermal Drive Co., St. Paul, Minn., through the use of the Multi-Speed blower control. Starting at a slow speed with a relatively cool bonnet, the fan is speeded up in direct proportion to the increase in bonnet temperature. This longer operation of the blower is claimed to prevent stratification and give better heating.

Multi-Speed is a hydraulic control which replaces the ordinary blower pulley. A capillary tube runs from a coil in the bonnet to the pulley, and the fan switch is set below 90°, so the blower will operate continuously when the temperature in the bonnet is above that level. An increase in temperature in the bonnet expands the medium in the capillary which changes the diameter of the pulley to increase the fan speed.

The unit will be sold to furnace manufacturers for installation on new equipment, and through dealers for conversion of existing forced warm air installations.

◈

Irvington Heat-Resisting Flexible Plastic Tubing

A FLEXIBLE PLASTIC TUBING with unusual heat-resisting qualities has been developed by the Irvington Varnish & Insulator Co., Irvington, N. J.

Called "Fibron," the product, Irvington says, has all the advantages of previous flexible plastic tubings plus the ability to withstand varnish treatment and baking operations without stiffening, even in applications where extreme operating temperatures are encountered. It is also resistant to strong acids and alkalies, denatured alcohol, petroleum and its products, and coal tar solvents.

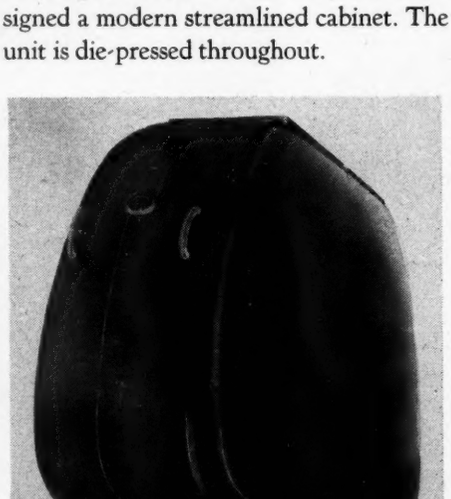
The Irvington Company reported, too, that in tests by initial users the tubing has performed satisfactorily in instances where high dielectric and tensile strengths are important.

◈

Mor-Sun Unit Has Streamlined Cabinet

MORRISON STEEL PRODUCTS, Inc., Buffalo, N. Y., announces that its new Mor-Sun line of Pressed Steel Furnaces for forced warm air conditioning will be available for spring delivery.

Utilizing their extensive heavy metal stamping and fabricating facilities, Morrison has created a rugged, simple heat exchanger, around which they have designed a modern streamlined cabinet. The unit is die-pressed throughout.



In the heat exchanger, which is of 12-gage steel, such hitherto troublesome features as baffles, radiators, dirt and condensation traps, gaskets and reverse flue travels have been eliminated.

The Mor-Sun units will be available for oil and gas in a bonnet output range of 60,000 Btu to 200,000 Btu. They will be completely assembled at the factory as a package unit.

◈

Moncrief Announces New Gas-Fired Line

MONCRIEF'S New Gas-Fired Air Conditioning Units and Gravity Furnaces are completely redesigned from one end to the other.

These units have passed the rigid, 1947 requirements set up by the American Gas Association.

Enclosed in the new smartly-designed cabinet are many advanced engineering features that are new in Gas-Fired heating equipment which permit easier installation, easier servicing as well as greater operating efficiency.

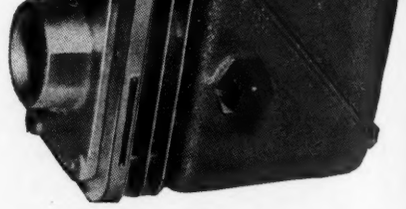
New literature describing these units in detail is being prepared and will be ready in the near future.

◈

Fireye Photoelectric Flame Failure Safeguard

FIREYE Flame-Failure Safeguard Type F18T is designed to provide explosion protection for all industrial and commercial oil and pulverized coal burners. Fireye is photoelectric—and therefore actually sees flame. When flame fails, Fireye instantly cuts off fuel and sounds an alarm. Unlike thermal controls, it is actuated not by the effect of flame failure but by the flame itself. Action is positive, instantaneous, electronic. It is made by Combustion Control Corp., Cambridge 42, Mass.

Fireye Type F18T has been designed to meet the requirements of the industrial user as well as the burner manufacturer. It consists of a phototube and amplifying system, housed in a dust-tight aluminum case. The entire control is mounted directly on the furnace wall and is aligned in a manner which permits the photoelectric cell to observe the flame through a 2" pipe connection which serves as both a sighting tube and a support for the equipment.



This simplified installation is made possible by the unique design features of the control. A clear pyrex filter keeps the equipment dust-tight and is mounted on a hinged shutter which permits it to be cleaned without shut-down. A heat-absorbing filter in the lens system as well as

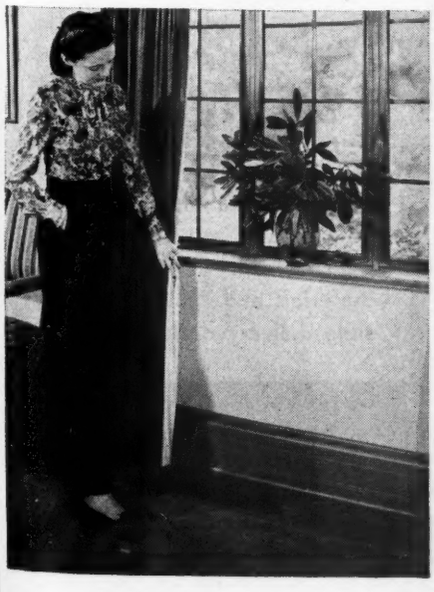
an efficient baffle system protects Fireye from all radiated heat. The specially designed phototube permits operation at high ambient temperature.

Cramer Announces New Interval Timer

AN INTERVAL TIMER claimed to be entirely new, featuring the Cramer Model E construction, has been announced by R. W. Cramer Co., Centerbrook, Conn. These instruments are designed to open or close a circuit on a predetermined schedule. The new Model E interval timer represents an advance in the design and mechanical construction of this type of equipment, stressing the following specific features: larger dials designed for easy reading and easy setting; sturdier frame construction permitting greater precision in original assembly and the promise of longer life; simplified screw mountings designed to conform to standard instrument practice so that timers may be grouped on instrument panels in combination with other typical control and indicating instruments to complete the installation.

New Base-Ray Heat Panel Announced by Burnham

BURNHAM BOILER Corp., announces the development and early production of the Base-Ray Heat Panel, a radically new heating unit, designed for both new construction and modernization work.



Replacing the conventional wooden baseboard, the new heat panel delivers radiant rays straight into the room at ankle height, conforming to the engineering ideal of "placement where heat loss is greatest."

In appearance it is a hollow cast iron unit 7" high and 1¾" wide, connected with the usual heating boiler. It can be used on all types of hot water jobs—forced circulation and gravity, one pipe and two pipe as well as two pipe steam and vapor installations.

Base-ray heat panels are installed on the outside walls in place of the regular baseboard, and painted to match the woodwork of the room. Thus they are completely inconspicuous and do not interfere with draperies or furniture placement.

Base-ray heat panels are easy to install and relatively inexpensive. They will be manufactured in 24" and 12" lengths and will be shipped assembled up to ten feet. When longer panels are required, they will be shipped in two or more pieces to be assembled on the job.

Sections are joined by means of push-nipple construction with short tie bolts. Valves, ells and traps are connected to base-ray panels at bottom opposite ends, as with tube type radiators. These connections are concealed by a neat metal enclosure which is flush with the front and top of the panels. Standard wood moldings at top and bottom of the base-ray panel give it the same finish as the other baseboards in the room.

New Blower Line for Low Temperature Cooling

A NEW LINE of overhead blowers for low temperature cooling is in production by The Rempe Co., Chicago. Prior to the war Rempe Co. was well-known as large producers of blowers and fin coils.

All blowers are housed in a modern steel bonderized case of gray wrinkle baked enamel finish. They are being built for use with all types of refrigerant including brine and prestone.

A feature of this new line is provision for different velocities of air speed to furnish the right volume of air for various and specific cooling jobs.

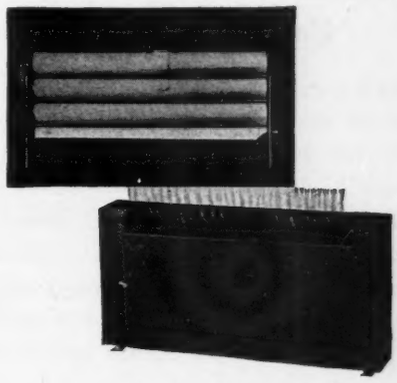
The coils are designed so that the outlet velocities of the refrigerants are well within safe limits. All tubes and bends are of full area—no obstructions.

Louvers are individually adjustable to permit a controlled flow of air for proper and uniform distribution.

Builds Humidifier for Home and Commercial Use

AN AUTOMATIC HUMIDIFIER which operates off the hot water tank and is capable of serving an average 6-7 room home, has been announced by the Skilbeck Mfg. Co., Kenosha, Wis.

With cover removed



As installed in room.

Designed to be used in connection with any type of heating system—the Skilbeck humidifier evaporates water by circulating hot water through coils, which are wrapped with absorbent material. A high rate of evaporation, sufficient to add the amount of moisture required is attained in this way—since the heated water evaporates quickly. A simple valve arrangement controls the flow of water as the evaporation process takes place.

The company also builds humidifiers for steam heating systems—used in industrial plants, as well as for hot water vapor and sub-atmospheric heating systems.

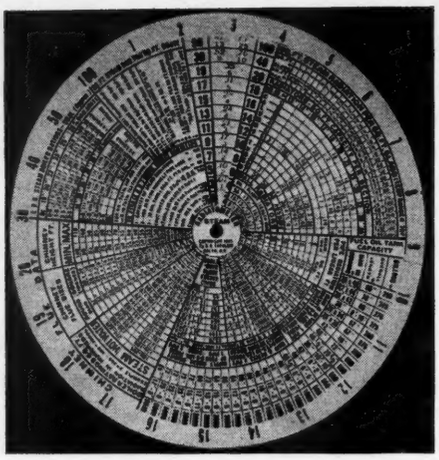
Flocator Measures Air Flow in Ventilating Systems

NOW IN PRODUCTION at the Dollinger Corp., Rochester, N. Y., is the Flocator, the latest design of a new and inexpensive air flow indicating instrument. It was designed for use in any air ventilation system.

The Flocator will require little or no attention for continuous operation. It supplies information which the ordinary

type of draft gauge fails to indicate; namely, the percentage of maximum flow being obtained at all times.

The Flocator will warn against any loss of air flow in a ventilating system from any cause whatsoever, thus preventing circulation loss which will in turn lower operating costs. It is being manufactured in two models, Model 45 for small capacity ventilation, and Model 75 for large capacity systems. The initial cost and installation expense are far below that of any of the flow indicators now on the market.



Calculator Solves Radiation Computations

A NEW CALCULATOR for measuring radiation for steam and hot water heating systems has been announced by Heat-O-Meter, New York 18.

It is claimed this new device, Heat-O-meter, (physically a round dial with three concentric celluloid printed discs) eliminates the tedious figuring, usually necessary to determine the correct amount of radiation, and can successfully and easily be used by anyone without previous technical training as its operation is rapid, not involving subtractions, divisions, complicated multiplication, nor the use of a formula. Just the simple turning of a dial and the correct answer is received.

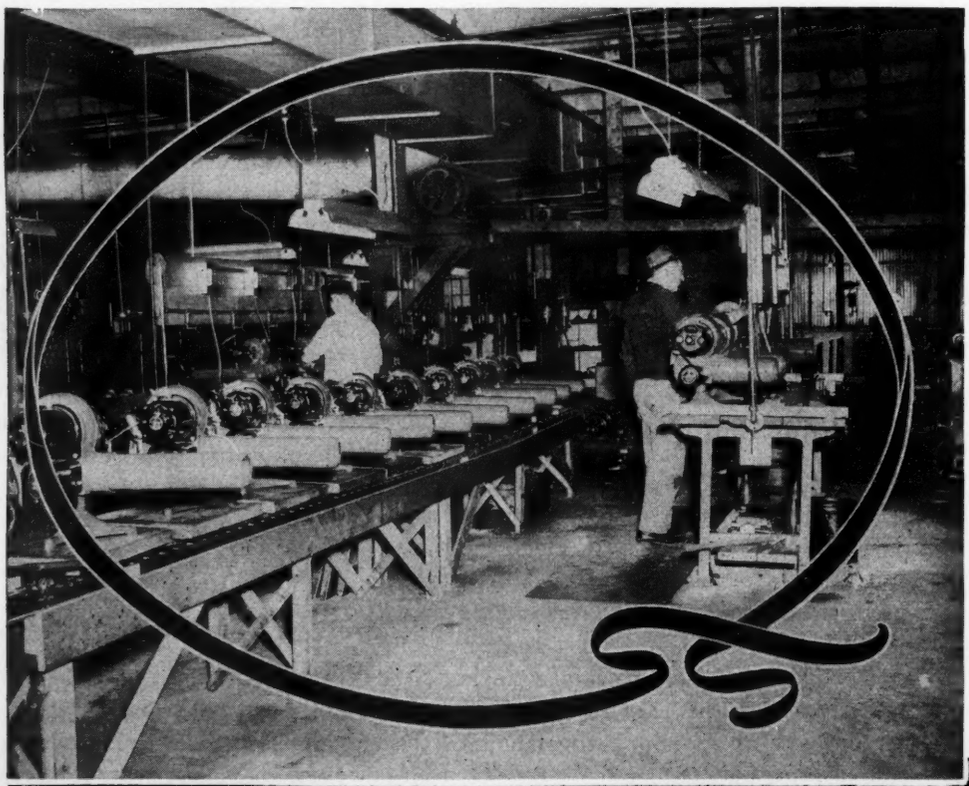
This dial contains sizes of mains, returns, risers, radiator sizes and capacities, round and sectional boiler net ratings, chimney flue sizes and capacities with minimum and maximum heights, hot water tank sizes and capacities, fueloil tank sizes and capacities, hot water generator capacities and other valuable heating information enabling plumbers steamfitters, architects, builders, oilburner and heating salesmen and all individuals who come in contact with heating problems to have the correct answers.

Additional information may be obtained by writing Heat-O-meter, 424 West 42nd Street, New York 18, N. Y.

"CR" Type Control Relay by Allied

PRODUCTION on a new control relay which combines compactness and light weight with dependable switching has been announced by Allied Control Co., Inc., New York, N. Y. Designated the "CR" Type relay, it is claimed to be more efficient on precision application and special control circuits than larger and heavier power relays.

Contacts on the "CR" are up to 1/4" in diameter, and are generally supplied in silver although alloy contacts are obtainable. Extra heavy gram pressure, inherent in the "CR" design, permits power switching heretofore possible only with



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Factory Inspection
Saves You Money

As every Nu-Way oil burner comes off the assembly line, expert checkers inspect all vital operating parts. Careful inspection guarantees to the dealer less after-sale servicing and to the customer more satisfaction.

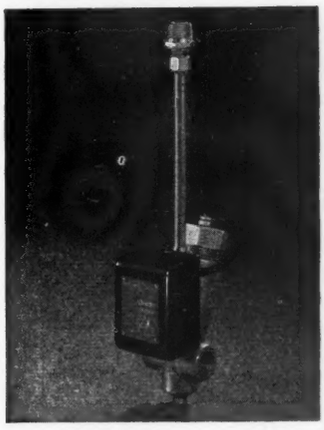
When you handle Nu-Way oil burners, you can be assured of the best in workmanship and materials and the earliest possible delivery dates.

The Nu-Way Corporation
Quality Oil Burners Since 1921, Rock Island, Illinois

Positive
Low Water Control

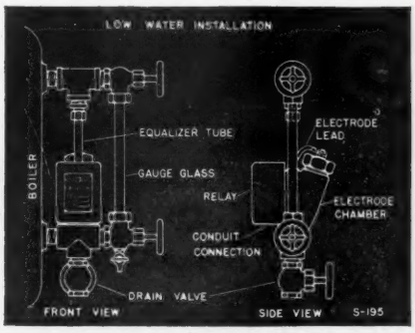
GENERAL CONTROLS

LOW WATER CUTOUTS



These electric low water cut-offs are free of moving parts, glands or seals under pressure, thereby eliminating greatest drawbacks of usual cut-offs. Designed to work satisfactorily on any type of water from spring water to brines. Large electrode area. Low current density insures freedom of spot currents. Low installation cost. Low and line voltage types available. Line voltage types with double voltage coils, permitting either 115 or 230 volts A. C. connections at installation.

L-2 Series



General Controls' engineers will help you fill your specific needs. For complete specifications on automatic temperature, pressure and flow controls, request Catalog 52B. Nearby is a factory branch or distributor equipped to meet your requirements.

GENERAL CONTROLS
801 ALLEN AVENUE GLENDALE 1, CALIF.

FACTORY BRANCHES: PHILADELPHIA • ATLANTA • BOSTON • CHICAGO
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THREE Shapes at Price of ONE

No matter for what shape or style of burner you need a Combustion Chamber—from 1 to 1.65 gals. of oil per hour—the R & I *improved* Chamber will fit. It can be made round, rectangular or pear shaped without any cutting or fitting. Bonding clips hold the eight sections together without cement.

If you need a Chamber for larger jobs, we can supply extension pieces.

With every R & I Combustion Chamber there is enough Hearth Material to make a 1-1/2" thick floor. Everything to do a complete job is in one package.

If your supply house cannot furnish R & I Chambers, write us and also ask for Bulletin OB-95.

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Manufacturers of Refractory Cements and Insulations for every condition since 1928.

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R & I Combustion Chamber

much larger relays. The versatile "CR" is available in two, three and four pole combinations, and if desired, hermetically sealed.

Molded bakelite is used throughout for insulation. Structural rigidity is assured by the use of a formed steel base.

Contact rating with ¼" silver contacts is 15 amperes at 24 volts DC or 110 volts AC, non-inductive.

The single pole "CR" weighs 3 ounces, is 1-33/64' high, 1-3/32" wide and 1-25/32" long.

Luxaire's New Units Are Approved by AGA

THE NEW LUXAIRE LINE offered by C. A. Olsen Mfg. Co., Elyria, Ohio, introduces many innovations in gas-fired equipment that will be entirely new to the heating industry. This line—new throughout—has many exclusive features.

New postwar gas-fired models are furnished both in air conditioning units and gravity furnaces. These models have passed the exacting 1947 requirements of the American Gas Association. In addition to the many new features of operation and design, the Luxaire line is also styled in new attractive colors of baked enamel.

Complete descriptive literature for both air conditioning and gravity lines is being prepared and will be available in the near future.

Get This New Book

BASIC SERVICE TEXT

for

Pressure Type Burners

by G. T. Kaufman, Technical Secretary,

OIL-HEAT INSTITUTE OF AMERICA, INC.

This manual has been prepared for basic training of installers and service men in residential oilheating. It is also a most useful reference source to both individuals who have completed the training course, and others who are engaged in, or have any interest in, oilburner work.

Chapter headings will show the inclusive coverage of the book.

Oilheating	Boilers, Radiators
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Tanks and Piping	Forced Warm Air
Pumps, Valves, Strainers	Heating Load
Fans, Air Supply	Water Heating
Atomizing Nozzles	Combustion Chambers
Motors, Transformers	Chimneys, Draft
Ignition Systems	Testing Efficiency
Controls, Two Wire	Maintenance, Repairs
Controls, Three Wire	Service Procedure

Every service man can well use this book. Use the coupon to order today enough for your training and reference needs.

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Please send us ..... copies of BASIC SERVICE TEXT at two dollars each. Remittance is enclosed.

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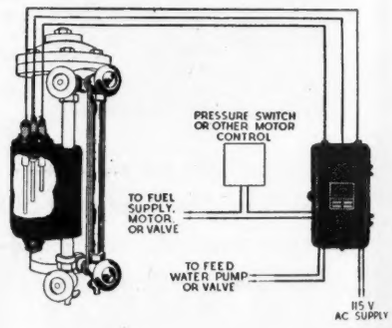
New Fireye Control Regulates Feedwater

BOILER FEEDWATER Control Type B177N is designed by Combustion Control Corp., Cambridge 42, Mass., to provide fully automatic control for commercial and industrial boilers. It maintains desired water level through valve or pump control and instantly cuts off fuel supply and sounds an alarm at a predetermined dangerous low-water level.



"Fireye" operates without any moving mechanical elements and the only contact with the boiler is through an auxiliary fitting containing metal probe rods which determine the control levels.

Fireye Probe Fitting is mounted parallel to the water column and wired to Fireye Control. The probes within the Probe Fitting mark boiler feedwater pump-on and off levels and a low water danger point. When water falls below the middle probe, Fireye closes the circuit controlling the pump and water feeds into the boiler until the top probe is reached.

The lowest probe defines the danger point below which boiler water must not fall. Should water drop below this safety probe, Fireye immediately shuts off the fuel supply and sounds an alarm.

Dr. Waldo H. Kliever, has been appointed to the newly created position of Director of Research by the Minneapolis-Honeywell Reg. Co. Dr. Kliever joined the Honeywell organization in 1940.

Remember the name---

EDCO

WHEN YOU NEED . . .

- **PRESSURE REGULATING VALVES**
- **PIPE LINE STRAINERS**

A complete line of Edco Valves and Strainers are available in a large variety of styles to meet every requirement, and for use in replacement work. Skillfully made of the best materials conforming to the standards of the Underwriter's Laboratories, their performance is guaranteed.

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P. O. BOX K, EDDINGTON, PENNA.

Heart-Beat of the Burner's Oil Flow

DEALERS SEEK the SERVICES — of the —

Teesdale T.U.X.

Fully Automatic OIL PUMP

because it's —

Self-Priming . . . . . .
Vapor and Oil Tight . . . . . .
Silent and Leak-Proof . . . . . .
All Parts are Interchangeable . . . . . .
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CAPACITY: 30 gallons per Hour

Passed by Underwriters

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Producers of the Famous Teesdale Oil Pumps and Accessories

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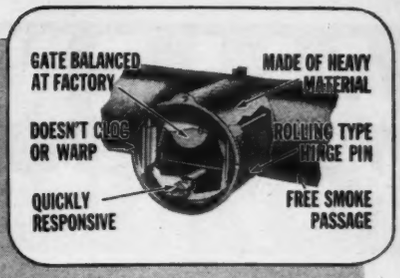
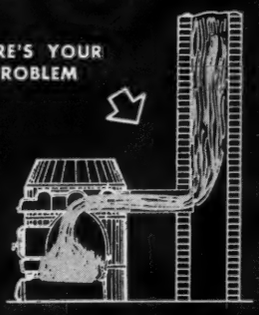
THE *field* DRAFT CONTROL



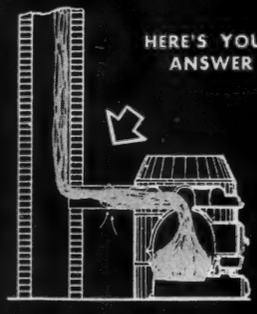
CONTROLS THIS DRAFT TOO

HERE'S YOUR PROBLEM



Excessive, uncontrolled chimney drafts waste up to 25% of the fuel burned in nine plants out of ten!

HERE'S YOUR ANSWER



A FIELD DRAFT CONTROL holds drafts to a minimum, provides fuel savings ranging up to 25%!

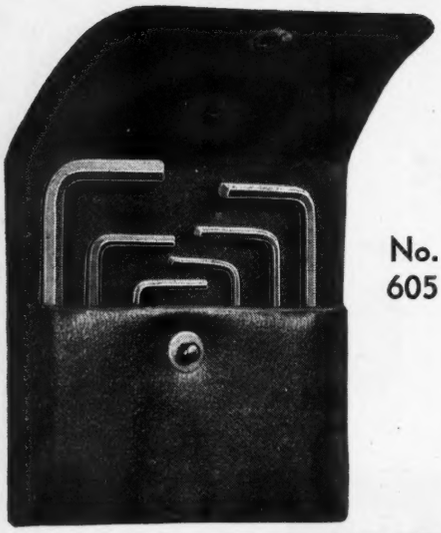
● When a heating plant performs BADLY, the owner SQUAWKS . . . . but LOUDLY! The product is 'lousy'; the dealer is a crook!" Yes, word-of-mouth *advertising* work *BOTH WAYS.* And the pity is that the *heating* plant may be a beautifully engineered job, lacking only proper draft control for perfect operation. Good, inexpensive, trouble-free insurance AGAINST this type of bad publicity is a FIELD BAROMETRIC DRAFT CONTROL on every installation. But be sure you install a FIELD. Remember this: Leading heating equipment manufacturers, with facilities to test and re-test every draft control made, have picked FIELD as standard equipment.

FIELD CONTROL DIVISION

field

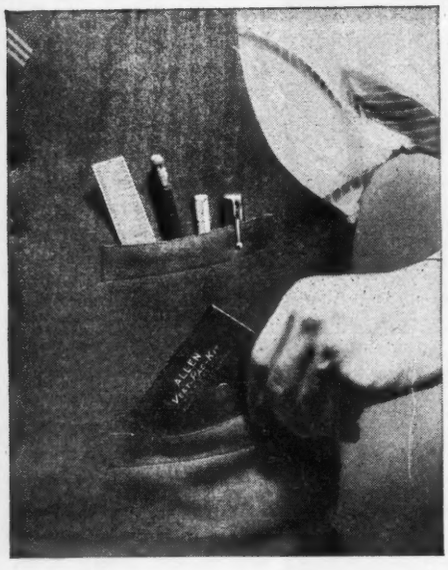
H. D. CONKEY & COMPANY • MENDOTA, ILLINOIS

ALLEN Key Kits



No. 605

VEST-PAC-KIT



No. 605 — Packet only 3″ x 2¾″ over-all contains 6 Hex Keys to fit hollow set screws in sizes No. 4, 5, 6, 8 and 10; also ¼″ and 5/16″. Same keys fit socket head cap screws in sizes No. 4, 5, 6, 8 and 10. Most compact and serviceable little set you could ask for. List price, only 50¢.

Ask for complete listings **of Allen Hollow Screw Assortments and Key Kits. Address inquiries and orders to Dep't. M,**

THE ALLEN MFG. CO., HARTFORD 1, CONN., U. S. A.

Reader's Problems

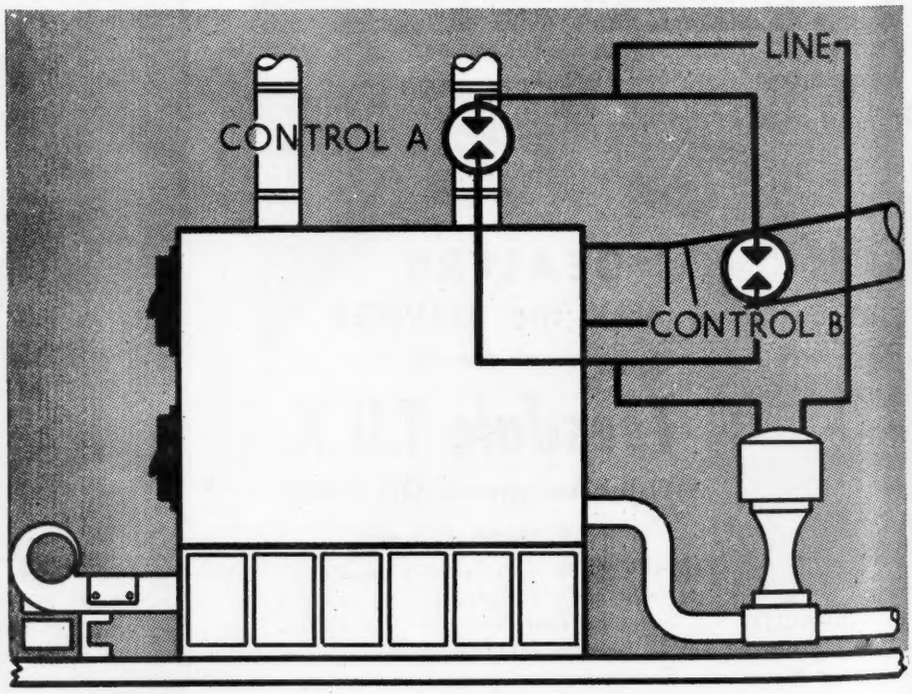
Q. Kindly outline the best way to start and stop the large circulator we are adding to a gravity circulation hot water heating plant fired 8.0 gph. I do not want the circulator started by an outdoor thermostat set at 65°, as it would run continuously during long burner "off" periods on mildly cold afternoons and when the burner stayed idle for hours because of night set-back of the room thermostat. Nor do I want the circulator to start and stop with the burner, as in winter this would give forced circulation only when the burner runs. The original heating system is well designed and will be excellent with the circulator helping it. A new part of the heating system is designed for forced circulation and will not circulate by gravity. The boiler does not provide running hot water. A 300-gallon hot water tank is heated by a separate boiler.

J.T.D., *Salamanca, N. Y.*

A. Consider using the plan indicated by the diagram. Controls A and B are in parallel with each other and in series with the live leg to the circulator motor. Closing the circuit of either control starts the circulator. Control B is reverse-acting and is affected by smokepipe temperature; when the burner starts and raises the smokepipe temperature, this control starts the circulator. The control should chill slowly after the burner stops and should be set for wide differential so that its circuit stays closed for about ten minutes after the burner stops. See page 83 of the booklet "Better Oilheating" for a complete description of such a control.

Control A is a reverse-acting temperature control which you will set between 130° and 160° to obtain results which suit you. Regardless of Control B, Control A will keep the circulator running continuously when the boiler temperature is above the minimum you select.

Control B starts and stops the circulator during moderately cold weather when short oilburner "on" periods do not raise the boiler temperature to, say, 130°. Control A gives continuous operation of the circulator when the boiler stays hot during colder weather. This control must be set lower than the boiler temperature control which acts as high limit control for the oilburner.



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- **PRODUCE HIGHER CO_2**
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- **REDUCE SERVICE EXPENSE**
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- **CARRY SATISFACTORY GUARANTEE**

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Liquid
KLEEN-FLO
BOILER WATER CONDITIONER
CLEANS OUT RUST, GREASE, MUD, OIL, SCALE, SLIME AND OTHER BOILER WATER IMPURITIES DEPOSITED ON THE HEATING SURFACES
IMPROVES FASTER HEATING • SAVES FUEL
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FUEL OIL CONDITIONER
IMPROVES OIL BURNER EFFICIENCY

Boiler Water Conditioner

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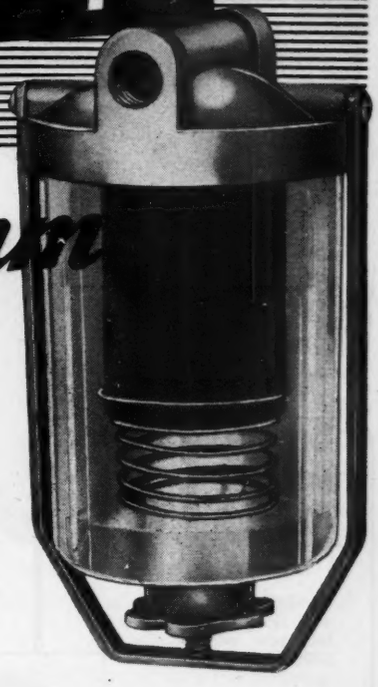

Visible CHEMISTONE Element

Controlled Porosity Filter Unit

Highly Efficient and Dependable

Liberal Discounts to Dealers

Oil burners operate more efficiently when the major causes of stoppages are eliminated . . . Klemm Fuel Oil Filters remove dirt, sediment, water and other foreign matter . . . This assures a steady flow of oil to the burners . . . Every fuel oil customer needs this device . . . You make two profits on every sale . . . a liberal margin and a sharp reduction in avoidable calls for emergency repair service.

Look at these advantages:

1. **Dependable Performance** . . . Elimination of foreign matter assures smooth flow of oil.
2. **Wide Range of Use** . . . A Klemm unit operates efficiently with Nos. 1, 2 or 3 grade oil.
3. **Used With Any Burner** . . . Same element functions perfectly with all types of burners.
4. **Flow Capacity** . . . 50 gallons or more per hour at one-foot gravity feed.
5. **Oil Tight** . . . Extra wide gaskets make a tight seal for bowl and head casting.
6. **Easy to Install** . . . Can be readily installed on all standard models at burner or tank.
7. **Simple to Service** . . . Filter element is easily removed for cleaning. Use over and over.
8. **Full Visibility** . . . Inspection requires no removal of parts. Filter element is visible.

Write Today for Complete Information.

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MILLER
OIL-HEAT CONTROLS
GUARANTEED
Precision-engineered for small homes.
For space heaters, furnaces, boilers, or hot-water heaters.

LOW initial cost and customer service cost

MILLER SAFETY
Constant Level Oil Control
VALVE
Automatic reset when anti-flood safety device goes into action. 100% foolproof oil control.

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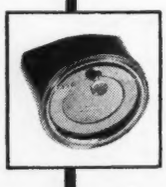
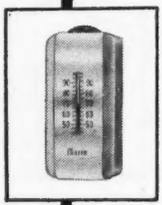
(electrical or mechanical operation) Three types available. Calibrated for warm air furnaces or steam or hot water boilers.



DRAFT REGULATOR
To fit 5", 7", 8" and 9" smoke pipes. Controls drafts at any determined setting.



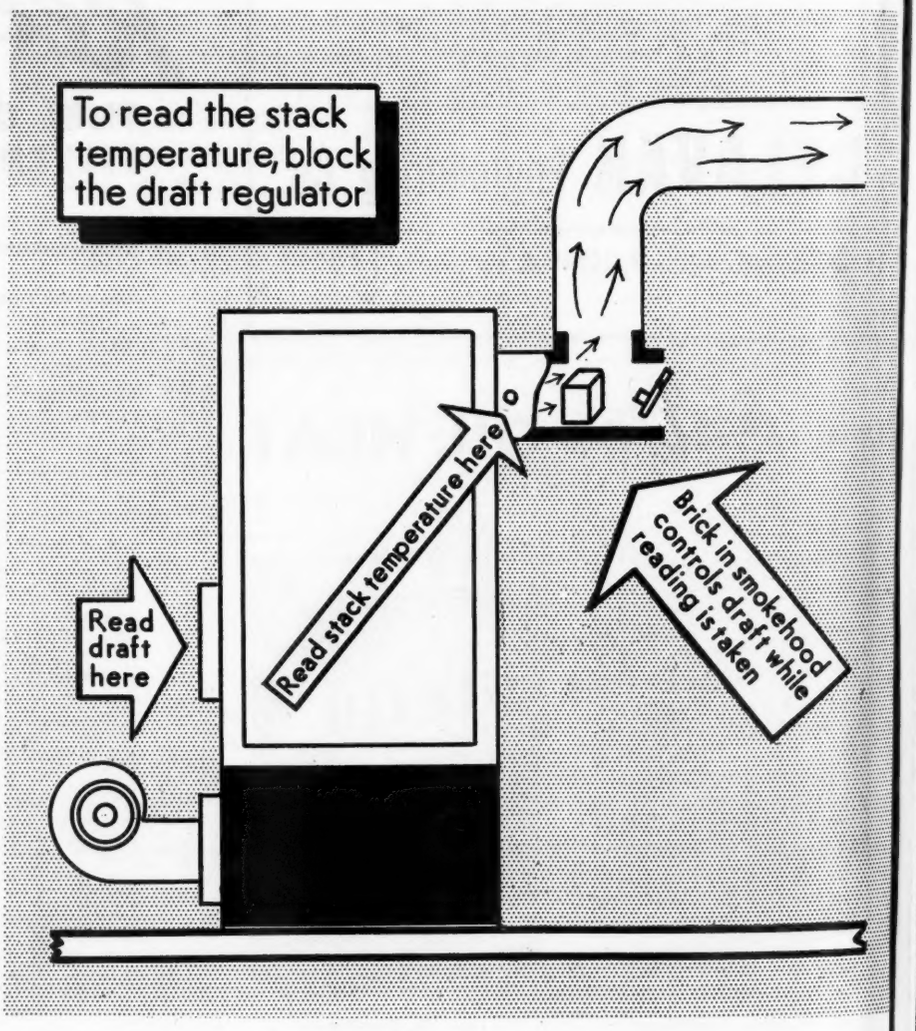
THERMOSTAT
Positive acting. Small differential (less than 1°F) assures even temperature at all times.

Write or Wire for Full Details TODAY!

THE MILLER COMPANY
HEATING PRODUCTS DIVISION
MERIDEN, CONN.
Since 1844

Q. There is difficulty getting a stack temperature reading from a small boiler-burner unit fitted with a draft control which opens and floods the smokehood with cold air. Holding the draft regulator closed gives too much smokepipe draft and increases the stack temperature. The smokehood gives 800° stack temperature with the draft regulator held shut, and 530° with the regulator free to swing open. I need to know how to find out the stack temperature with the boiler operating as it should, with the draft being controlled. T. J. M., *Sayre, Pa.*

A. First, using an opening in the firing door or flame observation door, find out the over-fire draft with the boiler operating normally and the draft regulator properly adjusted and swinging freely. Second, place a piece of firebrick in the smokehood in the position that gives the same over-fire draft you had at the start, but with the draft regulator fastened shut. Tending to block escape of hot gases from the boiler, the firebrick will act as a temporary damper and permit adjusting for the normal over-fire draft although the draft control is blocked shut. You will have to use cut-and-try methods to move the firebrick into precisely the needed position. Open the draft regulator to move the firebrick, then fasten the regulator closed and read the over-fire draft. Next, read the stack temperature. The opening you have been using for reading the stack temperature will be on the boiler side of the firebrick and will give a somewhat higher reading than if the stack thermometer were 12" from the smoke outlet of the boiler, in the vertical part of the smokepipe. To get a lower, true reading, insert the stack thermometer in the smokepipe 12" from the smoke outlet of the boiler, seal the draft regulator tight shut, and regulate the draft using a butterfly damper which you have installed in the smokepipe on the chimney side of the stack thermometer. Installed just for the test, this butterfly damper will be removed later.


To read the stack temperature, block the draft regulator
Read stack temperature here
Brick in smokehood controls draft while reading is taken
Read draft here

GUARDIAN FLEXIBLE COUPLINGS

For OIL BURNERS

Sleeve end of coupling is close sliding fit on blower wheel hub. Power is transmitted through four spline ribs of coupling fitting four spline grooves in blower wheel hub.

This exclusive direct drive coupling, with rubberized cushion gripped permanently, has no parts to get out of order, or to lubricate. Minimizes misalignment, free-end float, and backlash. Custom-made for specific job. Immediate attention. More than 300,000 tested and proved in oil burners during the last five years.

Regular Guardian Coupling

Manufacturers, Jobbers or Dealers—

GUARDIAN UTILITIES CO.
218 E. Michigan St., Michigan City, Ind.

WRITE or WIRE

FITZGIBBONS
for STEEL BOILERS

1886 — 60TH ANNIVERSARY YEAR — 1946

MOST ECONOMICAL IN FUEL
1886
THE FITZGIBBONS BOILER

There is a wealth of "know-how" to be learned in sixty years of building steel boilers. And there is a satisfying assurance that the boiler you select with that experience behind it, is the product of masters in boiler design and construction . . . Whether for the small home or the large institutional building, specify Fitzgibbons and be sure.

Fitzgibbons Boiler Company, Inc. 101 PARK AVE. NEW YORK 17, N. Y.

Make sure your oil burner storage tanks are equipped with Rochester Dual-Dial Level Gauges. They are *always* accurate. They can be read easily by home owner and delivery man. They are safe . . . no connections between dial head and float rod. Impulses are transmitted through a solid gauge head by means of non-electric magnets on float rod and pointer assembly. They are underwriters listed. They help you sell oil burner installations because they add all these features at so little cost.

Note: If you have been unable to get a sufficient supply of Rochester Dual-Dial Gauges, please bear with us. We have increased present capacity to step production immediately.

ROCHESTER MANUFACTURING CO., INC.
8 ROCKWOOD STREET • ROCHESTER 10, N. Y.

Canadian Representatives R. W. Anderson and Co., 125 Redpath Avenue, Toronto, Ontario, Canada

Flue Gas Thermometers

To check combustion and heat distribution on oil burner installations, you couldn't find a more practical instrument than Rochester's Flue Gas Thermometer. Specify Model 1726.

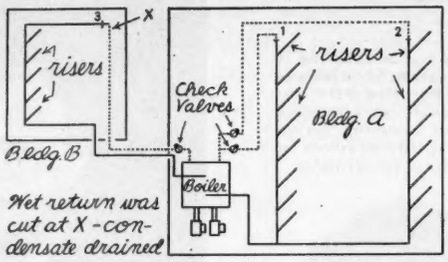
See Rochester's Exhibit at OIH BOOTH 109

Rochester Guaranteed Accuracy **ENGINEERED INSTRUMENTS**

LIQUID LEVEL, TEMPERATURE AND PRESSURE GAUGES

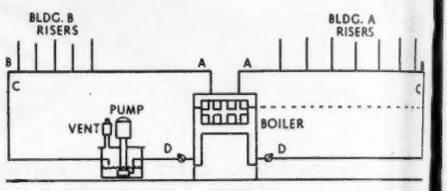
Q. Our sketch shows a big boiler fired by two oilburners and heating Bldg. A, also Bldg. B some distance away. The risers go to one-pipe steam radiators. The dotted lines are wet returns with swing check valves at the boiler.

Bldg. B heated poorly lately and more radiators were installed. Our problem now is that the only way we can heat Bldg. B is by draining condensate at point X. We have cut this line, capped the side that goes to the boiler, and fitted the load side with a globe valve which we leave cracked open. This lets out a little live steam, and drains the condensate which runs then to a sewer. We know this is not good practice. The boiler water feeder works steadily making up for the wasted condensate. Can we drain this condensate to a small water pump (we have sump pumps and other pumps on hand) to pump it back to the boiler instead of wasting it? Will installing a pump permit using unit heaters instead of small radiators in Bldg. B? Should we remove the flaps from all of the check valves in the return lines to improve the system? The building will be used only a few more years, therefore only a few dollars can be spent to arrive at fairly good, economical heating. E.O., *Camden, N. J.*



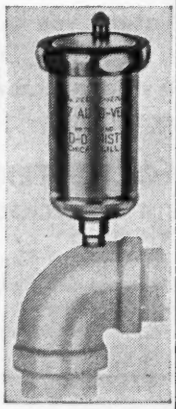
A. To begin with, your drawing shows no steam main quick vents, and we have marked it at points 1, 2, and 3 where such quick vents should be installed. It is very likely that this old system would be improved also by equipping all the radiators with new vent valves.

Our accompanying simplified drawing shows the steam line and return line to Bldg. B and one of the circuits of Bldg. A. Study the circuit of Bldg. A to understand your difficulties. With five pounds boiler pressure, the pressure at point A is five pounds. If steam main A-B is large enough for the load it carries, the pressure at point B will be but slightly less than five pounds. If the wet return line B-D is large enough, the pressure drop from B to D will be slight. With steam and return lines of ample size, during normal full-load operation of the system the level of water in the wet return line will rise to C, which is slightly above the level of the water in the boiler (dotted line), but it will not rise as high as B, the end of the steam main. If steam main A-B or return line B-C is undersize for the load or clogged, condensate will return to the boiler properly and the steam main will become waterlogged. The pressure at A



may be five pounds, for example, but the pressure at B may be only three and one-half pounds because line A-B is undersize or clogged.

When condensate does not return properly from the radiators to the boiler, the check valve at D is of no help, for when it stays closed no condensate can re-



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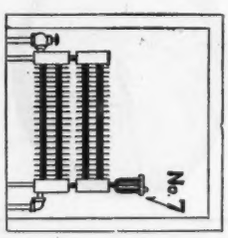

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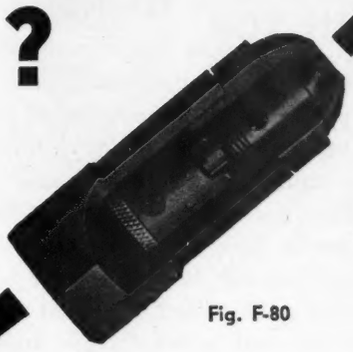

Fig. F-80

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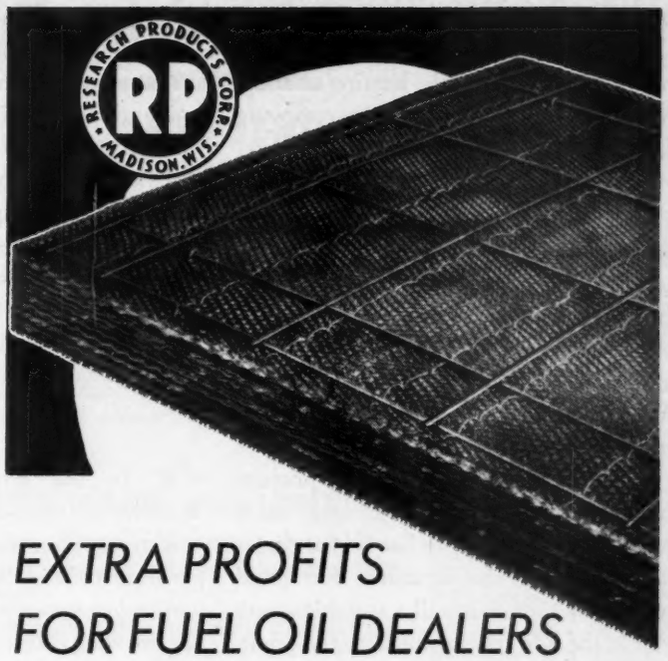

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turn to the boiler through it. As it takes a slight pressure difference to lift open the flap of a check valve, the heating of Bldg. A may possibly be improved by removing the flaps from the check valves in the return lines which serve this building.

Our diagram shows how you may be able to use one of the pumps you have on hand to push condensate from Bldg. B to the boiler through the existing return line, which probably can carry considerable additional load with the pump helping it. We show line C, the original wet return line, terminating in a pump chamber which has a tight-fitting cover to prevent the escape of steam, and a steam main quick vent. You seem to have an arrangement similar to this in mind. You could instead, of course, install a suitable steam trap in the line from point C to the pump reservoir, and use an open reservoir at the pump. The trap would open and discharge water collected in it, but would close after the water was discharged and prevent the escape of steam from the steam main. The pump would be started and stopped by a float-controlled switch. As homemade condensate handling devices and pumps may give you considerable trouble, we recommend that you obtain data from manufacturers of condensation pump units, and install a pump unit and specialties designed especially for this type of service.

To arrive at conclusions regarding the advisability of placing additional loads on the steam mains in this system, install steam pressure gauges at the beginning and ends of the three steam mains and read the gauges with five pounds pressure on the boiler while it carries maximum load.

* * *

Q. In the article, "Low-Cost Hot Water," of your September 1945 issue, you strongly recommend that a tank temperature control be used for a summer-winter hot water plant. You say that this control should be connected in series with the boiler temperature control on a steam boiler.

Here is a question for you: When we want most modern results from a tank-type summer-winter layout hooked to a steam boiler, doesn't the use of this tank temperature control eliminate the need for a mixing or blending valve of the type installed to make sure that in winter scalding water does not come from the faucets of an installation with a good-sized indirect heater and hot water tank?

M.S., *Brooklyn, N. Y.*

A. The tank temperature control recommended in the article serves only to permit the steam boiler to chill during the summer months (and on days during the heating season when little heat is needed from the radiators) when the hot water storage tank is warm enough. This control permits the steam boiler to become cool when no heat is needed and the hot water tank is hot enough, and it is installed mainly to save oil in summer.

The tank temperature control has no effect on the burner or the temperature of the tank on heating season days when, in order to heat the house, the burner operates sufficient time to heat properly or overheat the hot water tank. On typical installations, the switch of this control usually stays open (because the hot water tank is well heated) during the four or five coldest months of the heating season.

This control does not, then, prevent overheating the hot water tank in winter, and does not eliminate the frequently-encountered trouble of scalding water com-

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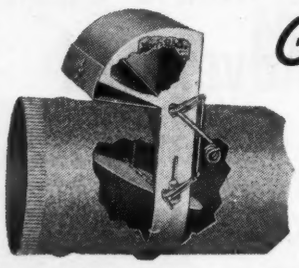

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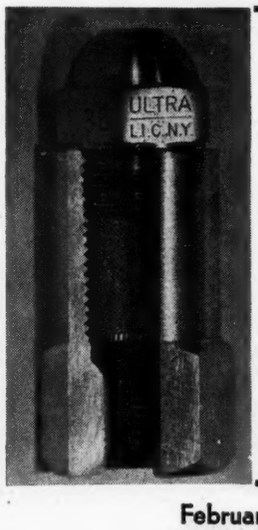

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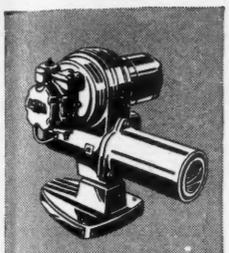

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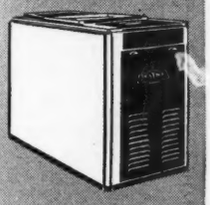

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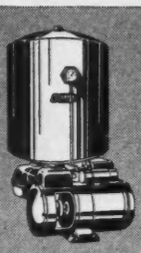

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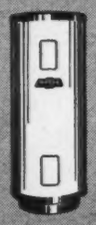

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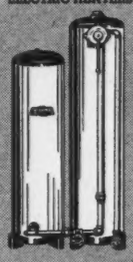

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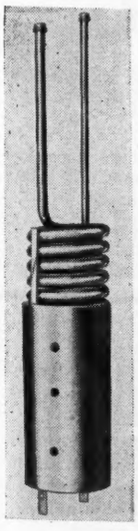

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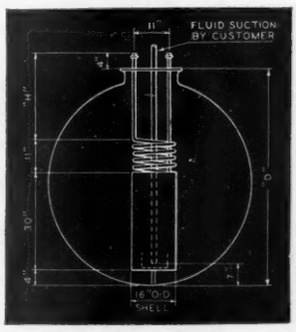

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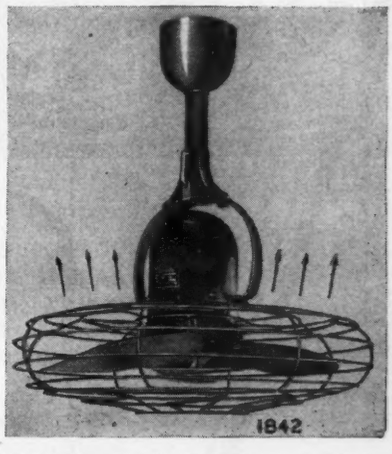

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* * *

Q. As I am new to the fueloil and oilburner business, I ask your indulgence if there is an obvious answer to a matter in your magazine which puzzles me. On page 96 of the December issue of FUELOIL & OIL HEAT, *K.W.D. says that he knows his oil burner works all right with a firebox 11" in diameter when the burner is set for its lowest firing rate. He reveals also that his is a pressure type oilburner. I would appreciate your telling the size, in gallons-per-hour, of the smallest flame for a pressure burner, to which K.W.D. refers.*

P.M.S., *New York.*

A. Using extremely clean and easily-burned pre-war No. 2 fueloil, or using No. 1 oil or kerosene, many burner experts are of the opinion that a pressure burner can operate satisfactorily and efficiently while giving a fire as small as about .7 gph. Other experts have been of the opinion that, even using high quality pre-war No. 2 fueloil, the lowest gph rate which should be used on large numbers of actual installations of pressure burners is about 1.0 gph.

Considering the fueloil sold as No. 2 during the war, many burner specialists declare that 1.0 gph or slightly higher (up to 1.2 or 1.3 gph) is the minimum practical rate for typical pressure burners. These men recommend that pressure burners fitted with exceptionally low-capacity nozzles burn No. 1 oil or kerosene.

The use of highly effective special strainers and filters on an installation, in addition to the strainers usually in fuel units and located at nozzles, does not change the figures given above, for the premise is that pressure burners which give small flames should be equipped with line strainers or filters designed to help avoid nozzle plugging trouble.

All things considered, we judge that K.W.D. considers about 1.0 or 1.2 gph the minimum for the pressure burners he installs.

◈

Herbert L. Laube, Vice President in Charge of Engineering for Carrier Corp., has announced the appointment of four directors of development. The four directors are: *Sam F. Shawhan,* Director of the Air Conditioning Development Department; *R. Wayne McLaughlin,* Director of the Centrifugal Refrigeration Development Department; *J. Loren Fletcher,* Director of the Package Units Development Department; and *Lars Hanson.*

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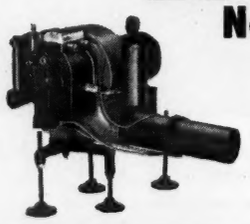

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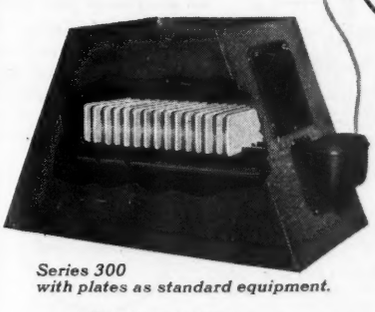

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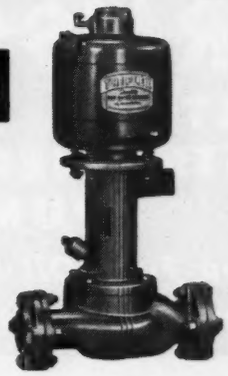

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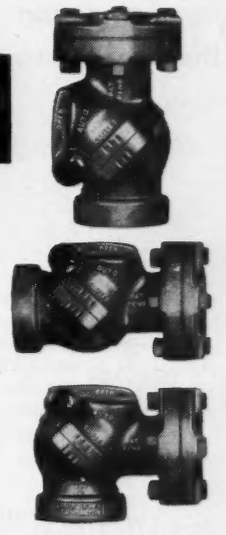

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Oilheating Trends

(*Continued from page 11*)

two-thirds of these new men are just back from the war. Averaging all sections of the country, there is one new burner dealer to twelve old ones, and one new fueloil dealer to each fourteen old ones.

There have been some complaints about the new one or two truck fueloil men selling below ceiling prices. Apparently one-fourth of them do, and the others conform to the rest of the market. Price cutting by these new men is apparently most prevalent in the Boston area. On the other hand, their share of total sales is so small that the old dealers have taken no steps to meet their price competition, and probably won't have to.

COMMENTS: Typical comments on the month's questions are . . . "Some of the majors in our section are building up wholesale gallonage by selling truckmen who operate at cut prices, giving away most of their profit" . . . "There's a bad black market in oil pumps and transformers" . . . "Our factory tells us that when the present wave of strikes is over there will be plenty of burners for us" . . . "The demand in our city for oilburning equipment is terrific" . . . "In trying to get burners, first one manufacturer is short of pumps, the next transformers, the next motors, etc. If we could only get these shortages all concentrated in one factory the others might ship some burners" . . . "The word 'Dealer' in your question needs to be defined. Aside from plumbers, who are in and out all the time, only one important burner and oil dealer has started up here (Philadelphia)" . . . "We have told our peddlers that they would have to seek a new supplier if they cut prices below ceilings. We are now enjoying a nice margin and also a stable market and we are trying our best to have these new fellows see the folly of cut prices and what they mean to the market as a whole if continued" . . . "The fact that plumbers install burners and are not qualified to service them will eventually reflect on oilburner sales."

◈

M. J. Murray has been appointed general sales manager of Hart Oil Burner Division of Avery Farm Machinery Co. with headquarters at Peoria, Ill. Murray comes to Hart from the Conco Engineering Works, Mendota, Ill., where he served as Assistant Sales Manager of the Heating Division. Prior to that he was for ten years with Oil-O-Matic.

Frank R. Markley has been named general sales manager of Sun Oil Co., Philadelphia, according to Samuel B. Eckert, Vice President in Charge of Marketing. Markley, formerly manager of the company's Industrial Products Department will serve as assistant to Eckert in all sales activities.

Penn Electric Organizes New Canadian Company

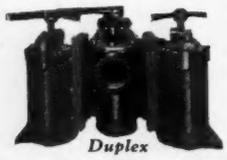
PENN CONTROLS, LTD., Toronto, Canada, has been formed by Penn Electric Switch Co., Goshen, Ind., to manufacture and sell the Penn line of automatic controls for heating, airconditioning and refrigeration equipment, pumps, compressors and engines.

Arthur H. Hills, well-known Canadian engineer and sales executive, has been named manager of the operation. He has been connected with Sarco (Canada) Ltd., for the last eleven years.

KRAISSL
FILTERS
STRAINERS
PUMPS
Keep Fuel Oil Lines Open and Active

Year-in, year-out performance proves the skill of KRAISSL engineering design and the honesty of KRAISSL manufacture.

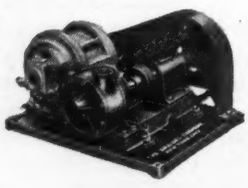
Class 72 Strainers and Filters



Single and Duplex types for suction or discharge service — any practical degree of filtration in units designed for low pressures as well as up to 500 lbs. hydrostatic test—easily removable filter basket insures quick cleaning.

Class 60 Heavy Oil Pumps

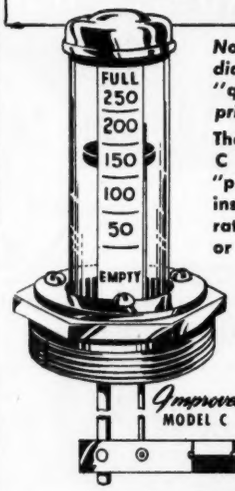
Standard equipment wherever independent pump and motor sets or booster pumps for pump-type burners are required.



Submit your fuel-line problems to KRAISSL engineers—literature and prices on request.

295 WILLIAMS AVE.
THE KRAISSL COMPANY
HACKENSACK, N. J.

Adjustable MEL
FUEL-OIL GAUGE



Now available for immediate deliveries at reduced "quantity production" prices.

The new *improved* Model C Mel Gauge has been "priced to sell"; is easy to install or adjust to accurate tank content readings or directional dial facing.

When ordering Mel Gauge please be sure to specify the capacity of tank and size of threaded gauge opening.

• New corrosion protected all metal rotating float.

Mel-Gauge COMPANY
EAST HAVEN, CONNECTICUT

One-Pipe Steam

(*Continued from page 64*)

works as it should. Set it for no higher maximum pressure than is needed to heat every radiator properly. Two pounds pressure is suitable for many domestic systems. Check the differential adjustment of the room thermostat to make sure that where, for example, 20-minute "on" periods are needed for best results, the burner is not usually running five or 50 minutes at a time. Make certain that no other service man can give your customers much better heat merely by making good use of the differential adjustment in the room thermostat.

In many cities, there is need for better attention to steam plants than has been given these systems to date by typical servicemen. Right now, the best results are being obtained by specialists at oil-fired steam heating. These men know what it is to try out a complete set of new vent valves in an ailing system, to handle water testing and sampling equipment, to try out different gph rates and carefully gauge the results, and to set up room temperature recorders and oilburner "on-off" recorders on problem jobs. Without trying to become a professor of steam heating overnight, however, the typical serviceman who frequently encounters steam boilers can be of much greater service to his customers and his employer if he will determine to show by his daily work that he understands steam plants and does not pass up one opportunity to render good service for them as well as for the burners which fire them.

◈

Warm Air Course Resumes

AFTER BEING CANCELLED a year ago due to school and convention restrictions, the Annual Forced Warm Air Conference will be held for the fifteenth time this year at Michigan State College, East Lansing, Mich., March 18 to 21, inclusive. This is one of the best sources of quick and accurate information in the country on warm air design and installation. Recognized authorities in their particular fields instruct classes for four days of intensive study covering every phase of warm air heating, both forced and gravity, from house construction to the sizing and location of registers and grilles.

The fee for the entire course is $10. Sleeping accommodations at about $2 a night can be arranged through either the Hotel Olds, Hotel Roosevelt, or Hotel Porter in Lansing. Registration is by mail in advance of the opening of the course to Professor L. G. Miller, Michigan State College, Room 111, Olds Hall, East Lansing, Mich.

◈

Capt. A. E. Stacey, Jr., Essex Falls, N. J., received the F. Paul Anderson Gold Medal for distinguished scientific achievement at the annual meeting in New York of ASH&VE. Before entering the Navy, Capt. Stacey was vice president of Buensod-Stacey Air Conditioning Co., N. Y., and prior to that time had been Chief Engineer of the Carrier Corp.

Clarence A. Rundall has joined the Sales Department of Airtemp Division, Chrysler Corp., as Assistant Director of Heating Sales. Mr. Rundall will make his headquarters in Dayton, Ohio.

The Logical Control is the Combination Pressure & Water Level

•

Newark Controls

Bloomfield **New Jersey**

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ON

FUEL OIL PREHEATERS
WATER HEATERS
INSTANTANEOUS HEATERS
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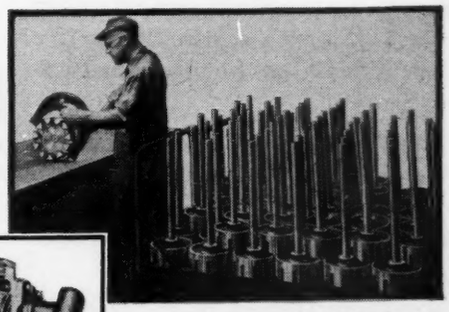
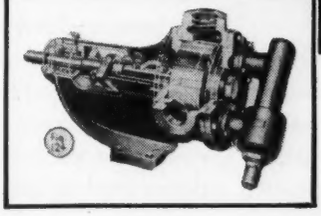
Write For Details.

MANNING AND LEWIS

28-42 OGDEN STREET **NEWARK 4, N. J.**

VIKING Says "NO"





So You Will Say "YES"

In spite of the rush of producing pumps for rebuilding industry on a peace-time basis, Viking still knows how to say "No" when it comes to manufacturing rotary pumps.

All parts undergo rigid inspection to insure that pre-war standards of quality are maintained. There is no sacrifice of quality. When Viking says "No" to parts coming through the line it's you they are thinking of and it's you who will continue to say "Yes." Viking is a pump that places quality above everything else.

Write for free Bulletin Series 1506 today. It will give you the latest information on Viking rotary pumps.

See Our Catalog In SWEETS

VIKING PUMP COMPANY

CEDAR FALLS, IOWA

Economy Model 1A-25
Single bolt construction provides for quick cartridge replacement.

DeLuxe Model 2A-300
Steel Handle . . . no tools required for speedy replacement of cartridge.

. . *Eliminates much of unprofitable service* . .

Dealers in increasing numbers tell us that GENERAL FILTERS installed on new and old burners eliminate much of unprofitable service. DELUXE Model 2A-300 with extra large cartridge holds from two to four times more solids, waxes, gums, moisture and microscopic particles than most oil filters. It is designed especially for dirty tank installations and when superfine filtration and long cartridge life are desired . . . ECONOMY Model 1A-25 for average burner not using heavier than #3 oil—especially suitable for vaporizing or pot type . . . ample size for full season—the rate and dirt capacities compare favorably with many filters of much larger size. GENERALS may be installed anywhere in the oil line but preferably at the burner.

Send for literature and name of jobber in your territory.

GENERAL FILTERS, INC. 14435 GRAND RIVER AVE. DETROIT 27, MICHIGAN

Plan Now to Sell

(*Continued from page 47*)

Why are today's markets fluid? Certainly the upheaval and turmoil of war are primarily responsible for the present situation. War itself does breed confusion and chaos. But—that 4½ year gap in the production of familiar products and appliances would exact a toll in its own right. In just about sixty seconds I can cite a perfect example.

Imagine a group of you looking out a main street window five years ago. As the cars went by, you would single them out by name. "There's a new Buick!" or "See that new Nash!" or "Isn't that new Packard a honey!"

Yes, but that was five years ago. Today—look out the same window at the flow of traffic. You don't find yourself calling them by name. They're all just automobiles.

Name consciousness, brand preference must be revived. That means selling. More than that, gentlemen, it means selling . . . according to plan. Why delude ourselves by thinking that our product, our service, our commodity has a permanent option on the fickle affections of the public. Don't get me wrong! Brand preference will come back! But manufacturing a quality product is only part of the job. Brand preference must be sold back, too.

Up to now we have stressed our side of the picture pretty heavily. We have seen how our 1939 outlook has been disturbed—perhaps I should say upset—by events of the past 4½ years. What about the public? What about that mass mind which we are going to influence? Isn't the mass mind a bit disturbed and upset, too?

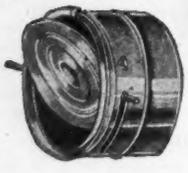
How critical a buyer can the average American be when shopping for a new oilburner, refrigerator, radio, vacuum cleaner, electric iron, washer, etc., to replace a similar product that is ten, twelve, or fifteen years old? For 4½ years, now, that average American or his neighbor has been unable to buy a new oilburner, refrigerator, radio, vacuum cleaner, electric iron, washer, etc. There have been no over-the-fence discussions about comparative heating bills, about distant stations tuned in, about plenty of ice cubes, about cleaning rugs, about easily cleaned clothes. Yet . . . such conversations, such informal conversations, led to an amazingly high percentage of pre-war sales in all fields.

As planners, we know that we must discard our outmoded 1939 thinking. We have no choice if our plans are to fit the times. But the average American buyer is held fast in the world of 1939-40-41 as far as his standard of values is concerned. He, too, has no choice. As planners we cannot afford to overlook this situation. True—industry needs good *selling*. But good selling demands good buyers. That's why the "passionate purchaser" is so demoralizing. He has absolutely no sense of values and is merely bent on spending.

If—as we plainly see—the average American buyer has temporarily lost his sense of values, how can we best lead him to appreciate the worthwhile products of 1946? You could win every presidential election from here 'til doom's day with the votes of all the Americans who know what television is. But how many of those very same Americans would know how to buy a television set?

PREFERRED

DRAFT-A-JUSTOR



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PREFERRED UTILITIES Mfg. Corp.
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UNDERWRITERS APPROVAL
ALL SIZES • FOR ALL PURPOSES
PRE-CAST COMBUSTION CHAMBERS
Precision made from "B & W" Refractory Mix
***Amerform* FILL-AND-VENT BOXES**
IMMEDIATE DELIVERY • LARGE CAPACITY • DISCOUNTS ON REQUEST
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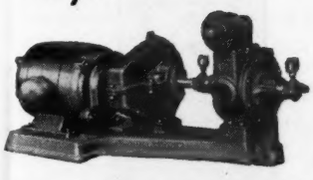
The Key to

BLACKMER PUMPS

- LOWER PUMPING COSTS
- SUSTAINED PUMPING CAPACITY
- PUMP DEPENDABILITY



Write for Bulletin 102 PUMPS FOR THE PETROLEUM INDUSTRY which explains why the "Bucket Design" (swinging vane principle) maintains pumping capacity by automatically compensating for wear and how the buckets, when finally worn out, are easily replaced and the pump restored to its normal capacity.

BLACKMER PUMP CO., 2170 Century Ave., Grand Rapids 9, Michigan

SERVING THE PETROLEUM INDUSTRY FOR OVER 40 YEARS

If we ask ourselves some of these questions as we prepare our plan, we'll become better acquainted with the state of the mass mind—our target for today and tomorrow.

During the war years, sales executives consoled themselves with almost continuous conversations with their research engineers. As a result many of us are as familiar with new features, new products, and sensational innovations as if he had actually been building them. Now—while the research engineers were keeping up our morale, the public—the mass mind—was getting its glimpse of the world of tomorrow through the advertising pages of the nation's magazines. With that picture in mind, Mr. Planner, here is a question: "Is what you are going to produce and sell in 1946 what your average prospect is expecting to buy from you or someone else in your field?" In other words: "What has the mass mind been led to expect from you—whether in oil-heating, radios, refrigerators, washers, automobiles, or what have you?" Again, I'd like to remind you that today's market is a fluid market.

For instance, millions of Americans want to see the new automobiles. But how many millions want to buy them? Let's not mistake curiosity for interest. If curiosity led to sales, one of the fastest-selling products in the United States would be the steam shovel. I think you've noticed.

Incidentally, that estimated 75,000 civilian passenger cars produced in 1945, figures out only 2.2 cars to each U. S. dealer. And this average does not hold true, literally, since some manufacturers have not turned out any cars for their dealers.

In spite of the fact that annihilation and destruction are the ultimate objectives of military planning, we can profit from the techniques of military planning. I refer, specifically, to the use of both strategy and tactics as components of the overall plan. Such a breakdown keeps the overall plan from becoming cumbersome or unwieldly in operation.

For the moment, let's see how the dictionary defines strategy and tactics. First, we'll turn to strategy: "Strategy is the science of military position and of the combination and employment of means on a broad scale for gaining advantage in war; generalship." Next, we turn to tactics: "Tactics: the science and art of military and naval evolutions; specifically, the art of handling troops in the presence of the enemy."

In our planning then, strategy becomes the plan—the blueprint behind the battle of managements, the battle for industry position. Strategy is the charted course followed in man-to-man selling. The retail salesman, you know, is the foot soldier of our economy. Maybe you'll find it easier to remember "strategy" and "tactics" in this fashion: Strategy has to do with the action of management; tactics with the action of manpower. Both are vital to your overall success.

My advice to the planner would be summed up along these lines:

1. Know the mass mind. Then convert that mass mind into markets.
2. Know your industry.
3. Know your product—that shining new one, of course. But don't forget the one the public knows.
4. Know your competition — both

HAYWARD OIL BURNERS

ROTARY and PRESSURE ATOMIZING TYPES

Dealer and Distributor Inquiries Invited.

HAYWARD MFG. CO., INC.

505 COURT STREET BROOKLYN 31, N. Y.

Asphalt Paint
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Fuel-Oil Tank Cleaner
Furnace Cement
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Parts Cleaner
Oil-Line Cement
Pipe Joint Compound
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ATTRACTIVE PROPOSITION AVAILABLE TO MANUFACTURERS' REPRESENTATIVES, SALES AGENTS & JOBBERS.

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HAGO PRODUCTS

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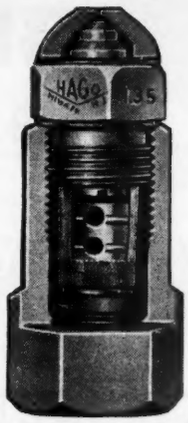


kinds. The pre-war variety known to you and your prospects, alike, from experience. Recognize postwar competition—the new products, the new names, that will gain a foothold because of consumer faith in their claims. Learn the reasons behind this faith in newcomers whose roots are no deeper than the war years.

5. Break down your plan into its two workable phases—strategy and tactics.

6. Believe in what you know—doubt what you think you know.

7. Recognize the existence of a lag of at least 4½ years in public knowledge of your product. The mass mind understands only what it sees and knows.

8. Beware the "passionate purchaser!"

I sincerely hope these eight points will help you in your planning conferences. If, however, in the midst of all your headaches—there are many and there will be more—you feel in need of an overpowering incentive to keep going, think of this.

Look upon those billions and billions of accumulated dollars as you do upon atomic energy. Released in a wild orgy of reckless spending, those dollars could be an atomic bomb to an American economy. Inflation is the economic atomic bomb that could wreck us—relegate such inspiring phrases as "free enterprise" and "the American standard of living" to the world of the dead and forgotten. But—if we plan—and plan well, those potentially dangerous dollars can become a source of controlled atomic energy to power a happy, healthy, prosperous nation. In the economic world, mass production and selling—according to plan—come as close to atomic energy as any force I know.

America needs your plans, gentlemen. America must have your plans, because without your plans you'll never sell, and bluntly stated the choice is this: "Sell—or Go Bust!"

◈

Manufacturers See Future Apartments Airconditioned

AIRCONDITIONING can be included in postwar apartment building developments at a cost to the tenant of approximately $1.27 a month per room, it has been reported to the Refrigeration Equipment Manufacturers Association.

The estimate is based on a study made by engineers and architects of modern air conditioning equipment and the methods by which such equipment can best be utilized in new apartment buildings.

Cost Estimates

Detailed results of the study, according to the report, indicate that a modern apartment in a temperate climate can be air conditioned during the warm season at a total cost of about $15.30 a room, or $1.27 a month over a year.

The cost includes a complete return on the initial investment in air conditioning equipment in 20 years, taxes, administration, electrical energy, condenser water, operating labor, repairs and 6 per cent interest on the unreturned investment.

The above figures, REMA officials said, indicate that air conditioning is not a luxury beyond the reach of the person with an average income, but rather a basic comfort which can be provided at small additional cost to apartment dwellers.

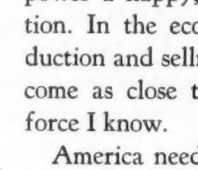
OIL SOOT **E-Z** DESTROYER

WAR ON FUEL OIL WASTE

Simply spray E-Z, and the soot in fire chamber and flues vanishes instantly. Increases efficiency of oil. One trial will convince you. "EASY" TO USE . . . ECONOMICAL TOO!

Makes satisfied customers.

DISTRIBUTORS: *Write for fine proposition.*



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Enclosed find check ( ) money order ( ) Send the following prepaid:

No. 1 pkg.....$1.00
No. 5 pkg..... 4.50

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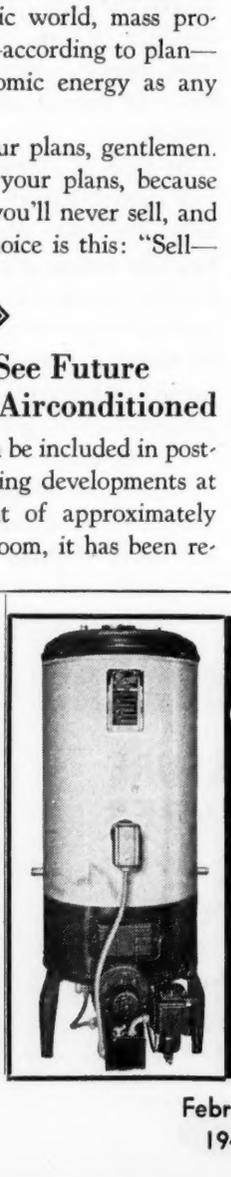

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INTERMITTENT OPERATION
ELECTRIC IGNITION
WITH BOTH VAPORIZING AND PRESSURE TYPE BURNERS
Available in Six Sizes

WRITE OR WIRE TODAY FOR COMPLETE INFORMATION

BOCK CORPORATION
MADISON WISCONSIN

SOLVE YOUR VENTING PROBLEMS

GORTON *Equalizing Valves for Radiators and Gorton Air Eliminators For Mains*

Gorton Valves are the quickest venting valves made with various sizes of air outlets properly designed for automatic heating.

SEND FOR LITERATURE AND PRICES

GORTON HEATING CORP., Cranford, New Jersey

Since 1887 Manufacturers of Heating Equipment

DEGREE DAY TABLES

ONE MONTH ONLY					SEASON TO DATE			
	November		Percent		(Sept. 1 to Nov. 30)			Percent
Normal	1944	1945	Change*		Normal	1944	1945	Change*
1139	1277	1354	+18.9	Albany	2421	2702	2726	+12.6
640	741	827	+29.2	Atlanta	1175	1297	1316	+12.0
852	936	980	+15.0	Baltimore	1647	1724	1669	+ 1.3
1000	1062	1133	+13.3	Boston	2087	2172	2156	+ 3.3
1102	1228	1277	+15.9	Buffalo	2384	2509	2599	+ 9.0
1108	1336	1331	+20.1	Chicago	2235	2456	2643	+18.3
953	1110	1131	+18.7	Cincinnati	1892	2053	2024	+ 7.0
1040	1223	1233	+18.6	Cleveland	2174	2351	2371	+ 9.1
571	648	668	+17.0	Dallas	944	937	967	+ 2.4
1012	1001	1006	— 0.6	Denver	2272	2082	2303	+ 1.4
1200	1344	1454	+21.2	Des Moines	2424	2396	2758	+13.8
1120	1250	1250	+11.6	Detroit	2369	2405	2491	+ 5.1
1129	1219	1229	+ 8.9	Grand Rapids	2456	2430	2582	+ 5.1
1052	1186	1270	+20.7	Hartford	2217	2444	2457	+10.8
1245	1526	1352	+ 8.6	Helena	3074	3326	3216	+ 4.6
331	380	396	+19.6	Houston	520	535	504	— 3.1
1026	1178	1205	+17.4	Indianapolis	2053	2129	2349	+14.4
986	1142	1216	+23.3	Kansas City	1877	1866	2097	+11.7
225	164	246	+ 9.3	Los Angeles	383	385	413	+ 7.8
875	1023	1031	+17.8	Louisville	1677	1805	1794	+ 7.0
1198	1403	1379	+15.1	Milwaukee	2515	2658	2885	+14.7
1415	1417	1602	+13.2	Minneapolis	3005	2795	3332	+10.9
305	347	428	+40.3	New Orleans	475	485	538	+13.3
934	1010	1057	+13.2	New York	1859	1899	1896	+ 2.0
1163	1289	1416	+21.8	Omaha	2310	2347	2602	+12.6
877	1013	1090	+24.3	Philadelphia	1697	1828	2074	+22.2
979	1161	1189	+21.5	Pittsburgh	2028	2298	2285	+11.2
1172	1277	1388	+ 9.9	Portland, Me.	2602	2817	2918	+12.1
729	760	780	+ 7.0	Portland, Ore.	1676	1520	1582	— 5.6
1015	1048	1216	+19.8	Providence	2157	2083	2280	+ 5.7
917	1142	1159	+26.4	St. Louis	1729	1904	2075	+20.0
1040	1057	1091	+ 4.9	Salt Lake City	2224	2133	2383	+ 7.1
426	424	441	+ 3.5	San Francisco	930	1062	1032	+11.0
1373	1420	1495	+ 8.9	Sault Ste. Marie	3233	3272	3494	+ 8.1
708	714	739	+ 4.4	Seattle	1812	1553	1905	+ 5.1
1090	1315	1306	+19.8	Toledo	2278	2557	2558	+12.3
870	947	989	+13.7	Washington	1725	1777	1730	+ 0.3

*Compared with normal.

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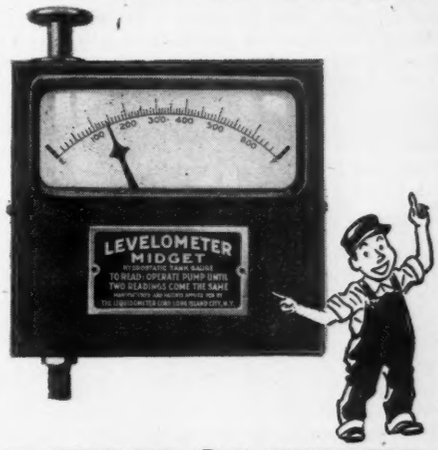

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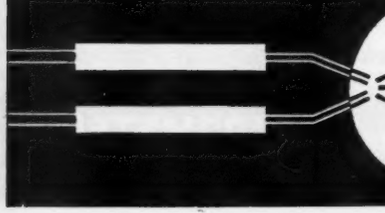

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